The Social and Emotional Profiles of Adolescent Bullies, Victims, and Bully-Victims

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Declaration

This thesis is submitted to the University of Warwick in support of my application for the degree of Doctor of Philosophy. It has been composed by myself and has not been submitted in any previous application for any degree.

Chapters one to six have been produced entirely by the author. Contributions to the three research papers are as follows:

Study One (Chapter Seven. Resubmission under review with Social Development)

- Idea: Alexa Guy and Dieter Wolke
- First Draft: Alexa Guy
- Statistical Analysis: Alexa Guy
- Subsequent Revisions: Alexa Guy, Dieter Wolke, and Kirsty Lee

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Abstract

Peer bullying is a highly prevalent issue for children and adolescents worldwide. There is now convincing evidence that bullying has adverse consequences for physical, psychological, social, and emotional health that last throughout adolescence and into adulthood. Despite heightened efforts to prevent and tackle bullying, the factors that motivate this behaviour, and may predispose individuals to being either the perpetrators or victims of bullying remain partly unclear. With focus on the perpetration of bullying, one possible motivation described by resource control theories, is the pursuit of social dominance and enhancing status within the peer group. Bullies have been described as popular although controversial in their social acceptance. However there has been little exploration of how this group compares to victimised adolescents, and in particular to those who are concurrently victimised and bully others (bully-victims). Differences in sociometric outcomes between bullies and bully-victims, or between these perpetration roles and those who are 'pure' victims or uninvolved, may be explained by differences in social-cognitive and emotional attributes. Bullies were historically portrayed as socially incompetent and thought to show deficiencies in their emotional functioning. However the strategic and manipulative behaviour of bullies suggests that this group may be relatively skilled in their processing of social information and understanding of others. It may be bully-victims who display the most deficiencies in their social and emotional functioning, and this may be fundamental in explaining their failure to gain the same social status as bullies.

Three studies were conducted, in which adolescents were first screened for bullying involvement using both self-reports and peer-nominations, and completed measures for behavioural problems, self-esteem, and peer-reported sociometric status. Participants were assigned to a bullying role (bully, bully-victim, victim or uninvolved), and a sub-sample of participants were assessed on abilities in the early stages of social information processing (encoding and interpretation) and emotional attributes (empathy, callous-unemotional traits, and affective instability). Study one investigated differences between the bullying roles on levels of social impact, social acceptance, and perceived popularity. It was found that all adolescents involved in bullying had higher social impact than those uninvolved. Bullies had the highest levels of perceived

popularity, whereas bully-victims, like victims, scored low on perceived popularity and had the lowest levels of social acceptance. Additionally, bullying role made the greatest contribution compared to other demographic and individual characteristics in predicting all aspects of sociometric status.

Study two explored the differences in abilities between the bullying roles on the encoding and interpretation stages of social information. There were no differences found between the groups with regards to emotion recognition abilities (encoding), however the victimised groups exhibited the most interpretation biases. Bully-victims showed the most hostile attribution biases, whereas victims endorsed more characterological self-blame attributions. Bullies showed no differences to uninvolved adolescents in their accuracy for encoding and interpreting social information. Finally study three investigated whether those involved in bullying showed differences in emotional traits and attributes. Those who were victimised, i.e., victims and bully-victims, had high levels of affective instability, and bully-victims also had the lowest levels of empathy and the most callous-unemotional traits. Bullies also had high levels of callous-unemotional traits, however showed no differences to the uninvolved group on any other emotional measure.

In conclusion, bullies were associated with the most positive attributes across the measures of sociometric status, and did not differ in social information processing and emotional attributes from those uninvolved in bullying; however they were found to be callous-unemotional. This supports resource control approaches in suggesting that bullying is used to acquire dominance in the peer group, which in turn reinforces the bullying behaviour. Bullies' social and emotional skills, in combination with being callous in pursuit of social status, may account for the ability to successfully use a combination of coercive and prosocial strategies to gain this social dominance. If bullies experience such social rewards, i.e., increased popularity, their behaviour will ultimately be more difficult to change. In contrast, bully-victims showed low sociometric status, showed the most interpretation biases, and the most negative emotional attributes. These adolescents are likely to represent the ineffective aggressors whose poor social skills, reactive behaviour, and dysregulated emotional style, explains their lack of success in gaining social dominance, along with their increased victimisation and rejection by peers. Interventions should target the whole peer group in reducing the social rewards received by bullies and encourage prosocial means for enhancing social

status. Social hierarchies in schools should also be addressed to increase the status of those who are victimised and provide the social support needed to reduce victimisation. Finally, interventions may benefit from considering the emotional traits and processing biases that increase the risk of involvement in bullying, and may ultimately influence the outcomes of those involved.

Thesis Overview

Chapter one provides a general overview of bullying; including the definitions, roles, and outcomes of bullying. Chapter two introduces three main aspects of sociometric status; social impact, social acceptance, and perceived popularity, and describes how involvement in bullying during adolescence may influence these. Additionally, differences between bullies, victims, bully-victims, and uninvolved adolescents with regards to sociometric status are explored. Chapter three introduces the Social Information Processing Model and describes how deficiencies and abilities at the early stages of processing may be associated with bullying and victimisation. Chapter four explores differences in emotional traits and attributes between the roles involved and those uninvolved in bullying. This chapter concludes by suggesting ways in which emotional attributes may influence behaviour through their effects on social information processing. In chapter five the prominent research questions across the three studies are described, and chapter six outlines the design and methodology of these studies. Chapter seven introduces the first empirical study that investigates bullying and sociometric status. Chapter eight describes empirical study two, which explores associations between involvement in bullying and abilities/deficiencies in the early stages of social information processing. Chapter nine (study three) focuses on how emotional traits and attributes may distinguish bullies, bully-victims, victims, and uninvolved adolescents. Chapter ten draws together the findings from studies two and three and explores associations between the emotional and social information processing measures. Finally, chapter 11 provides an overall discussion; integrating the findings and implications from the three studies.

CHAPTER ONE – Introduction to Bullying

1.1. Background

During the 1960s/1970s, bullying began to be recognised in the scientific literature as a 'problem' for children and adolescents, and marked the start of increasing research interest into this phenomenon (Heinemann, 1972; Olweus, 1974, 1978). Over the last 30 years, bullying has often been in media headlines and has become a prominent issue for educators, researchers, and government agendas worldwide (Smith, 1999; Smith, Cowie, Olafsson, & Liefooghe, 2002; Wolke, Woods, Stanford, & Schulz, 2001b). There have been recent claims that bullying may be an 'adaptive' behaviour for the small group of 'pure bullies' (those who bully others and are not victimised). This behaviour may increase access to resources; such as material gains, maintaining social dominance or access to dates and sexual relationships (Olthof, Goossens, Vermande, Aleva, & van der Meulen, 2011; Volk, Camilleri, Dane, & Marini, 2012; Volk, Dane, Marini, & Vaillancourt, 2015). Regardless of its nature or causes, bullying is no longer seen as a 'rite of passage' or an inevitable part of a child's development (Wolke et al 2013), but increasingly as an issue with damaging and long-lasting effects for those who are bullied (Moore et al., 2017; Wolke, Copeland, Angold, & Costello, 2013; Wolke & Lereya, 2015).

1.2. Definition

Bullying is generally regarded as a form of aggression (Olweus, 1993; Rivers & Smith, 1994); however not all bullying (i.e. indirect/relational bullying) involves overt aggression, just as not all aggression can be considered bullying (Rodkin, Espelage, & Hanish, 2015). Bullying is specifically defined as an aggressive behaviour which is intended to harm, occurs repeatedly and over time, and involves a real or perceived imbalance of power (Olweus, 1993; Rivers & Smith, 1994; Smith, 1991). This definition has since seen only slight alterations, such as "the systematic abuse of power" (Sharp

& Smith, 2002; Smith & Sharp, 1994), and most recently the Centres for Disease Control and Prevention (CDC) have defined bullying as unwanted aggressive behaviour which is repeated (or highly likely to be repeated), and where there is an “observed or perceived” imbalance of power (Gladden, Vivolo-Kantor, Hamburger, & Lumpkin, 2014). Thus three core components; repetition, intended harm, and an imbalance of power, underlie these definitions (Berger, 2007) and distinguish bullying from other aggressive behaviours.

1.3. Forms of bullying

Early research on bullying focussed on the direct physical and verbal behaviours that are most commonly associated with bullying. Examples of physical bullying behaviours include hitting, kicking or taking belongings; and verbal bullying behaviours may include name calling, teasing or making threats (Wolke, Woods, Bloomfield, & Karstadt, 2000). During the 1980s/early 1990s, research begun to acknowledge indirect forms of aggression; which were consistent with the definition of bullying, but more manipulative in nature, and therefore more difficult to observe (Björkqvist, 1994; Björkqvist, Lagerspetz, & Kaukiainen, 1992; Lagerspetz, Björkqvist, & Peltonen, 1988). Indirect (or relational) bullying involves behaviours that are aimed at damaging peer relationships or a person’s feeling of inclusion (Crick & Grotpeter, 1995); for example social exclusion or spreading rumours (Wolke et al., 2000). Peers may also be manipulated or controlled, and subsequently used as vehicles by which bullies can reach their victims (Lagerspetz et al., 1988). In this respect, relational bullying can be considered as a more sophisticated but hidden type of aggression which, to the outside world, it appears there has been no intention to inflict harm upon the target (Björkqvist et al., 1992).

Advances in communication technology and social media in recent years has seen the emergence of a new type of bullying; cyberbullying. Cyberbullying is broadly defined as bullying that is carried out via electronic means such as text messages, emails, online chatrooms or social networking sites (Kowalski & Limber, 2013). Cyberbullying has recently attracted considerable media and research interest and has been portrayed as a rising epidemic (Campbell, 2005; McGraw, 2015; Mishna, Khoury-Kassabri, Gadalla,

& Daciuk, 2012). However cyberbullying has been found to be mainly a new tool used by bullies rather than creating many new victims; with research showing a significant co-occurrence of traditional and cyber forms of victimisation (Juvonen & Gross, 2008; Olweus, 2012; Przybylski & Bowes, 2017; Waasdorp & Bradshaw, 2015; Wolke, Lee, & Guy, 2017; Wolke, Lereya, & Tippett, 2016).

1.4. Theories of Bullying

Bullying is generally described as a group phenomenon; an interaction between individual characteristics and environmental contexts that can attenuate or exacerbate these characteristics (Rivara & Le Menestrel, 2016). There are many theoretical perspectives that can be applied to the perpetration of bullying, and exist on either a systems level (i.e., environmental, familial), or an individual level.

1.4.1. Systems-level Perspectives

Social-Ecological theories propose that individual behaviour is influenced by the interplay of different contextual systems; family, peers, school, community, and cultural norms (Espelage & Swearer, 2009; Swearer & Espelage, 2011). These contextual systems, and their interactions with individual characteristics, can act either as risk factors or protective factors for bullying perpetration and victimisation (Rivara & Le Menestrel, 2016). *Family Systems Theory* refers to the influence that individual family members and the relationship dynamics within the family can have on behaviour and development. With regards to involvement in bullying, these influences may involve parent-level factors such as lack of parental involvement and support (Georgiou, 2009; Holt & Espelage, 2007), poor parental monitoring (Espelage, Bosworth, & Simon, 2000), and low parental warmth (Bowes, Maughan, Caspi, Moffitt, & Arseneault, 2010; Lereya, Samara, & Wolke, 2013a). Negative family interactions can also influence bullying (Duncan, 2004; Spriggs, Iannotti, Nansel, & Haynie, 2007); i.e., low family cohesion or inter-parental violence (Baldry, 2003; Bauer et al., 2006; Bowers, Smith, & Binney, 1994), and also aggression between siblings (Wolke, Tippett, & Dantchev, 2015). The influence of negative family interactions on bullying may be explained by

social learning theory, whereby aggressive behaviours in the family are observed and modelled (Monks et al., 2009) and, with regards to bullying perpetration, these behaviours may then be extended to peer contexts (Cross & Barnes, 2014; Tippett & Wolke, 2015).

Peer relationships undoubtedly play a role in influencing bullying involvement. *Social Norms Theory* suggests that group members often have a tendency to think and behave in ways that adhere to real or perceived group norms (Hymel, McClure, Miller, Shumka, & Trach, 2015; Salmivalli & Voeten, 2004). Thus, a misperception of pro-bullying attitudes within the peer group reduces the likelihood of its members defending victims, and could ultimately increase the risk of them 'joining in' with the bullies (Sandstrom, Makover, & Bartini, 2013).

1.4.2. Individual-level Perspectives

From an individual approach, bullying perpetration has been commonly associated with dysfunctional individual characteristics that lead to maladaptive behaviour. *Developmental Psychopathology Theories* have been applied to aggression, and have proposed how this dysfunctional behaviour may be a result of insecure early attachments, or by mechanisms of social learning (i.e., from family members, peers, teachers). Insecure attachments may result in an individual developing poor social skills or displaying greater interpersonal hostility towards others (Kennedy & Kennedy, 2004; Monks et al., 2009; Monks, Smith, & Swettenham, 2005). However, these early theories can be considered to be somewhat simplistic in their approach, and other individual level theories have considered bullying from a dual perspective; as a behaviour that can be dysfunctional and maladaptive, but also functional and adaptive (Rodkin et al., 2015).

Resource Control Theory posits that an 'effective bully' is one who adopts both prosocial and coercive behaviours (Hawley, 2003). These bi-strategic controllers, are able to use aggression to acquire social dominance, or other social and material gains (Hawley, 2003; Olthof et al., 2011), and experience overall favourable outcomes from their behaviour. However, those who use only coercive strategies are more likely to be the most maladjusted or socially rejected, and display the most reactive style of

aggression (Cook, Williams, Guerra, Kim, & Sadek, 2010; Hawley, 2007; Rodkin et al., 2015). Youth who use a combination of prosocial and antisocial behaviours can strategically select their targets and carry out their bullying to maximise gains and minimise costs (Card & Little, 2007); whereas the poorly-regulated and impulsive aggressors may lack the self-control and social competence to achieve the same rewards from their bullying behaviour (Salmivalli & Nieminen, 2002; Schwartz, Proctor, & Chien, 2001).

The different forms of aggression used by these two groups of perpetrators, i.e., proactive vs reactive, has been attempted to be explained by *Social-Cognitive Theories*, and most commonly by differences in social-information processing patterns (Arsenio, Adams, & Gold, 2009; Crick & Dodge, 1994, 1996; Sutton, Smith, & Swettenham, 1999b). It is suggested that unlike reactive aggressors who may show biased or deficient processing, proactive aggressors may show competent social skills and understanding, however these abilities are often used for antisocial means (Arsenio et al., 2009; Crick & Dodge, 1996; Lemerise & Arsenio, 2000; Sutton et al., 1999b).

Bullying and victimisation cannot be accounted for by any one theory. However individual-level theories in particular may account for how the roles involved in bullying, and especially those who bully others (bullies and bully-victims), are developed and maintained.

1.5. Bullying groups

In early research, those involved in bullying were categorised as either bullies or victims (Baldry & Farrington, 1998, 2000; Woods & Wolke, 2003), however research has identified a third group of those involved; labelled bully-victims (Bowers et al., 1994). This group are also referred to as aggressive victims (Guerra & Hanish, 2004; Schwartz, 2000; Schwartz, Dodge, Pettit, & Bates, 1997) or provocative victims (Berger, 2007), and are those who are victimised and also bully others. Bully-victims however are generally recognised as being a unique and distinct group with different characteristics to pure bullies and victims (Haynie et al., 2001; Mynard & Joseph, 1997; Wolke et al., 2000). Those who are not involved in bullying are frequently used within

research as a reference or control sample of participants to which the other bullying groups are compared. In some studies, this uninvolved group is further divided; for example into bystander, defender, and outsider sub-groups (Salmivalli, 2010; Salmivalli, Lagerspetz, Björkqvist, Österman, & Kaukiainen, 1996).

1.6. Characteristics of bullies, bully-victims and victims

Some individual and social relationship differences have been described between those involved in different roles in bullying. The following descriptions are 'prototypes' and may therefore not apply to all bullies, victims, or bully-victims. ***Bullies*** are often depicted as aggressive, anti-social and socially incompetent (Hazler, 1996; Randall, 1997). The aggressive nature of this group has been described as both reactive and proactive (Salmivalli & Nieminen, 2002); where aggression is used, especially by 'ring-leader' bullies, in a more strategic and manipulative way (Pouwels, Lansu, & Cillessen, 2016; Sutton et al., 1999b). This group are likely to represent the 'bi-strategic controllers' described by resource control theories, whereby anti-social and pro-social strategies are used for personal and social gains (Garandeau & Cillessen, 2006; Hawley, 2002, 2003). Bullies are reported to be hyperactive and are at risk of involvement in other risky or problem behaviours (Kumpulainen et al., 1998; Wolke et al., 2000). Compared to their victimised peers (victims and bully-victims), bullies report lower levels of anxiety and depression (Juvonen, Graham, & Schuster, 2003), and generally have high self-esteem. Socially this group are seen as confident, dominant and, despite being disliked by many, often have a high social status within their peer group (de Bruyn, Cillessen, & Wissink, 2009; Garandeau, Lee, & Salmivalli, 2014a; Pouwels et al., 2016).

Bully-victims have a provocative nature (Schwartz et al., 1997) and their behaviour is typically highly aggressive and reactive (Schwartz et al., 2001; Toblin, Schwartz, Gorman, & Abou-ezzeddine, 2005). Like bullies, these individuals are impulsive, hyperactive, and associated with the worst behavioural difficulties and externalising problems (Barker, Arseneault, Brendgen, Fontaine, & Maughan, 2008; Haynie et al., 2001; Veenstra et al., 2005; Wolke et al., 2000). Like victims, bully-victims have been found to have emotional problems and report high levels of depression and anxiety (Juvonen et al., 2003). Although this group are more assertive than pure victims, they

show a similar lack of self-esteem and overall self-worth, and are commonly associated with a lack of social competence (Toblin et al., 2005). Bully-victims predominantly display only coercive and antisocial forms of aggression, and are thus more likely to be maladjusted and socially marginalised by peers (Cook et al., 2010; Hawley, 2007; Haynie et al., 2001; Rodkin et al., 2015).

In comparison to those who perpetrate bullying, ***victims*** are not typically aggressive, however they show other maladaptive behavioural responses; namely a tendency for avoidance and escape (Crick, 1996). This group are often passive (Boivin, Hymel, & Bukowski, 1995) yet are reported to be emotionally sensitive and reactive (McLaughlin, Hatzenbuehler, & Hilt, 2009; Rosen, Milich, & Harris, 2012); and these attributes may ultimately increase their vulnerability for becoming a repeat target. In adolescence, victims show high levels of anxiety, depression and other internalising symptoms and often lack self-esteem (Juvonen et al., 2003; Mynard & Joseph, 1997). Victims are believed to have poor social skills and are commonly shy and withdrawn (Schwartz, 2000). Moreover, victims are more often lonely, have few friends and are often rejected by their peers (de Bruyn et al., 2009; Fox & Boulton, 2006; Juvonen et al., 2003; Mynard & Joseph, 1997).

Table 1.1 Behavioural, psychological and social characteristics associated with bullying groups

Characteristics	**Bullies**	**Bully-victims**	**Victims**
Behavioural	Aggressive	Aggressive	Avoidance behaviours
	Manipulative	Impulsive/reactive	Sensitive
	Externalising/risk taking behaviours	Severe behavioural problems	Submissive
			Little aggression
Psychological	Overall good psychological health	Anxiety/depression	Anxiety/depression
	High self-esteem	Low self-worth	Low self-esteem
		Emotional problems	
Social	Dominant	Poor social competence	Poor social skills
	Confident	Few friendships	Withdrawn
	High social status	Disliked	Few friendships
	Disliked yet popular	Socially excluded	Often rejected by peers

1.7. Outcomes of bullying

Involvement in bullying is not only associated with adverse behavioural and social outcomes, but also has negative consequences for physical, psychological, and emotional health (Arseneault, Bowes, & Shakoor, 2010; Arseneault et al., 2006; Wolke et al., 2013; Zwierzynska, Wolke, & Lereya, 2013). The effects of bullying have been shown to extend childhood/adolescence and can last well into adulthood (Arseneault et al., 2010; Sourander et al., 2016; Takizawa, Maughan, & Arseneault, 2014).

Although ***bullies*** are thought to be at increased risk of poor outcomes in adulthood, Wolke et al. (2013) found that this no longer remained when family hardship and childhood psychiatric disorders were taken into account**.** Child and adolescent bullies however have been shown to engage in subsequent risky or illegal behaviours including substance abuse (Nansel et al., 2001). Male bullies especially have been reported to have a higher risk for later offending (Ttofi & Farrington, 2012), however Wolke et al. (2013) argue that this could be attributed to co-existing disorders, and not bullying specifically. On the other hand, bullies have been associated with better outcomes for health; for example they show the lowest risk for low-grade systemic inflammation in adulthood (Copeland et al., 2014) This group are also reported to have the most positive social outcomes of all the groups involved; whereby they are able to maintain high levels of popularity and have more success with the opposite sex (Volk et al., 2015). These relatively positive outcomes may serve to reinforce bullying behaviours, resulting in a maladaptive pattern of behavioural responses (Haynie et al., 2001).

Bully-victims are considered to have the worst outcomes out of all the groups involved in bullying. They are at greater risk than pure victims for internalising disorders (Arseneault et al., 2010), and are more likely to contemplate or attempt suicide (Winsper, Lereya, Zanarini, & Wolke, 2012). However like bullies, bully-victims are associated with higher levels of substance use (Sigurdson, Wallander, & Sund, 2014) and repeated offending (Sourander et al., 2007). This group are considered to have the most adverse social outcomes (Lereya, Copeland, Zammit, & Wolke, 2015), whereby they experience continued peer rejection and further victimisation. Finally bully-victims are reported to have the highest risk of developing physical and psychosomatic health problems (Gini & Pozzoli, 2009, 2013).

Being a ***Victim*** is associated with negative outcomes for both physical and psychological health (Klomek, Sourander, & Elonheimo, 2015; Wolke & Lereya, 2015). Research has consistently reported strong links between victimisation and internalising disorders such as anxiety and depression (Lund et al., 2009; Reijntjes et al., 2010), and an increased risk of self-harm and suicide (Lereya et al., 2013b; Takizawa et al., 2014). There is now convincing evidence for the effects of being victimised on poor long term mental health outcomes and suicide (Moore et al., 2017). Moreover being a victim in childhood and adolescence is associated with increased somatic and psychosomatic

complaints such as colds, headaches, sleeping problems, and slow recovery from illness (Gini & Pozzoli, 2009; Wolke et al., 2013; Wolke & Lereya, 2014, 2015). In regards to social outcomes, victims have difficulty in forming and maintaining relationships with both friends and partners (Schäfer et al., 2004b), and continued social rejection may reinforce feelings of loneliness and result in further social withdrawal. School absenteeism and poor academic attainment have also been associated with victimisation in childhood and adolescence (Vaillancourt, Brittain, McDougall, & Duku, 2013; Wolke et al., 2013).

1.8. Gender differences in bullying

Overall, bullying has been found to be more prevalent in boys than girls (Haynie et al., 2001; Olweus, 1993; Whitney & Smith, 1993). There is a general consensus amongst researchers that boys are more likely to be bullies and bully-victims (Hanish & Guerra, 2004; Pellegrini, Bartini, & Brooks, 1999; Schwartz, 2000; Veenstra et al., 2005), and although gender differences are not as strong for victimisation, boys have also been reported as more likely than girls to be victims of bullying (Juvonen et al., 2003). Since the inclusion of relational bullying within research, further gender differences have been highlighted. Boys more often use direct and physical forms of bullying and are more likely to be directly bullied by their peers (Lagerspetz et al., 1988; Nansel et al., 2001; Rivers & Smith, 1994; Wolke et al., 2001b), whereas girls are associated more with relational forms of bullying and victimisation (Crick & Bigbee, 1998; Crick et al., 2001; Rivers & Smith, 1994; Whitney & Smith, 1993). Beyond these small gender differences in the prevalence and type of bullying involvement, the associations with problem behaviours and risk factors for bullying and victimisation appear to be similar for both boys and girls (Haynie et al., 2001).

1.9. Summary and Conclusions

Bullying is defined as unwanted aggressive behaviour which is repeated (or highly likely to be repeated), and where there is an “observed or perceived” imbalance of power (Gladden et al., 2014). The past 30 years has seen an increase in research activity

relating to bullying in childhood and adolescence (Berger, 2007), and it is no longer seen as a normal 'rite of passage', but as a global problem with damaging and long-lasting outcomes (Moore et al., 2017; Wolke et al., 2013; Wolke & Lereya, 2015). Theoretical frameworks have attempted to explain bullying involvement from environmental, familial, and individual perspectives, and these theories have contributed to understanding the forms and functions of bullying. From this, three main roles involved in bullying have emerged; bullies, bully-victims, and victims, and each have unique characteristics and outcomes (Haynie et al., 2001; Schwartz, 2000). With regards to the perpetration groups, bullies are depicted as anti-social and aggressive, yet remain most popular and appear to have the best outcomes out of all the groups involved (Juvonen et al., 2003; Wolke et al., 2013). Bully-victims, on the other hand, are associated with the most severe problem behaviours and are highly rejected by their peers (Veenstra et al., 2005; Wolke et al., 2000). Those who are victimised, both victims and bully-victims, have been reported to be socially withdrawn and emotionally sensitive (Juvonen et al., 2003; Rosen et al., 2012), and are at increased risk for developing internalising disorders, such as anxiety and depression. Bully-victims particularly have more adverse physical, psychological and social outcomes than bullies and those not involved (Haynie et al., 2001; Lereya et al., 2015; Schwartz, 2000).

Previous research has explored the causes of victimisation and its associated outcomes, with the overall aim of developing interventions to reduce victimisation in schools. However there has been less consideration of the perpetrators themselves, and research has been frequently focussed on the behavioural and aggressive attributes that typify this role. Bully-victims are associated with the most severe difficulties and outcomes and there remains some uncertainty whether they are an amalgamation of the characteristics of bullies and victims. Despite being acknowledged as a distinct and high-risk group, bully-victims are often incorporated within either a bully or victim group (or both), therefore are often not assessed independently.

Further knowledge is needed regarding the underlying emotional attributes that may distinguish those involved in bullying, with increased focus on the perpetrators and the way they not only differ to victims and uninvolved adolescents, but also how bully-victims may differ to the 'pure' bullies on aspects of social and emotional processing. These issues will be addressed in the proceeding chapters.

CHAPTER TWO: The sociometric status of adolescents involved in bullying

2.1. Overview

Bullying is undoubtedly a social phenomenon (Gini, 2006a). It can be considered as a form of social interaction and would not exist without a social context (Sutton, Smith, & Swettenham, 1999a). Thus, it is likely that bullying behaviour is not only motivated by individual or situational factors, but also by social motivations. Evolutionary theories claim that bullying is an adaptive behaviour for the bullies; providing advantages for survival and reproductive fitness (Book, Volk, & Hosker, 2012; Volk et al., 2012), or increased access to resources (Sentse, Kretschmer, & Salmivalli, 2015a; Volk et al., 2012). In adolescence, when there is more importance placed on peer relationships, bullying can be seen as a way to gain social dominance, or increase opportunities for dates and sexual partners (Caravita & Cillessen, 2012; de Bruyn, Cillessen, & Wissink, 2010; Olthof & Goossens, 2008; Pellegrini & Bartini, 2001; Volk et al., 2015). These social rewards may therefore provide a fundamental motivation for bullying behaviour (Garandeau et al., 2014a; Reijntjes et al., 2013b).

If this is true, then those involved in bullying should have different social status from those not involved. Sociometric status broadly refers to how liked or noticed an individual is within their immediate peer group, or wider social networks. It is usually measured by addressing three aspects: social acceptance, perceived popularity and social impact.

2.1.1. Social Acceptance

Social acceptance, social preference, sociometric popularity, or likeability are terms often used interchangeably within sociometric research, and all refer to how accepted or liked an individual is within the peer group (Cillessen & Rose, 2005; Garandeau et al., 2014a). Social acceptance will be the term used throughout this thesis, and has

been one of the most common measure of sociometric status used by researchers (Salmivalli et al., 1996; Warden & Mackinnon, 2003). Social acceptance is typically measured by asking children or adolescents which of their peers do they most/least like, or would most/least like to hang around with (Bukowski & Sippola, 2001). More specifically, an individual's level of social acceptance is derived by subtracting the number (standardised in classrooms) of 'least liked' nominations from the 'most liked' nominations (Coie & Kupersmidt, 1983). Acceptance by peers is thought to be most influenced by characteristics associated with pro-social behaviour; i.e., being kind or cooperative (Garandeau et al., 2014a; Warden & Mackinnon, 2003), or social cognitive abilities such as accurately perceiving social situations, and being able to take others' perspectives (de Bruyn et al., 2010). However, adolescents have been reported to place less value on pro-social attributes and prioritise enhancing their social status (LaFontana & Cillessen, 2010; Pöyhönen, Juvonen, & Salmivalli, 2010).

2.1.2. Perceived Popularity

Perceived popularity (also known as consensual or reputational popularity), reflects an individual's social power and dominance (Caravita, Di Blasio, & Salmivalli, 2009; Lease, Kennedy, & Axelrod, 2002). It is typically measured through peer nominations of who are the 'most' and 'least' popular members of the classroom, and is calculated by subtracting the 'least popular' nominations from the 'most popular' nominations (standardised in classrooms) (de Bruyn et al., 2010).

Whereas social acceptance is thought to largely rely on prosocial behaviour, perceived popularity is associated to both pro-social and anti-social attributes (Cillessen & Mayeux, 2004; de Bruyn & Cillessen, 2006; Olthof et al., 2011). Characteristics such as being attractive, athletic, or wealthy may increase perceived popularity (LaFontana & Cillessen, 2002; Reijntjes et al., 2013b; Vaillancourt & Hymel, 2006), but aggression has also been associated with popular status in adolescence (Cillessen & Mayeux, 2004; de Bruyn et al., 2010). Although perceived popularity and social acceptance have been found to be moderately associated (LaFontana & Cillessen, 2002; Sentse et al., 2015a), they are distinct constructs whereby the popular members of the peer group can also be highly disliked (Caravita et al., 2009; de Bruyn et al., 2010).

2.1.3. Social Impact

Social impact is a third aspect of sociometric status and represents the prominence or visibility of an individual within the peer group (Garandeau, Lee, & Salmivalli, 2014b). Like social acceptance, social impact uses peer nominations of the most and least liked members of the classroom, but these standardised nominations are this time summed to create a social impact score. Despite its similarities to perceived popularity in reflecting 'visibility' amongst peers, it is distinct from the other constructs of sociometric status. Social impact identifies those who are the most noticed or 'known' to others, regardless of whether they are popular or liked; thus social impact can be associated with both a positive and a negative sociometric status. Social impact has predominantly been used within sociometric studies for determining classroom hierarchies (Garandeau et al., 2014b; Schäfer, Korn, Brodbeck, Wolke, & Schulz, 2005), and it is often overlooked as a measure of social status in favour of social acceptance and/or perceived popularity.

Popularity, power, and social dominance may provide significant motivation for adopting aggressive behaviours, and specifically bullying others (Cillessen & Mayeux, 2004; Garandeau et al., 2014a). In adolescence, those involved in bullying appear to have distinct social profiles that may either be a direct result of this involvement; as a bully, victim, or bully-victim, or accounted for by other individual and situational characteristics associated with these roles. This chapter will discuss the three constructs of sociometric status in relation to bullying and victimisation during childhood and adolescence.

2.2. Sociometric status of bullies

As previously stated, aggression has been positively associated with popularity in adolescence. Aggressive youth are often popular although generally disliked by their peers (Cillessen & Mayeux, 2004; Cillessen & Rose, 2005; Garandeau, Ahn, & Rodkin, 2011). This finding has been extended to adolescent bullies, who are often reported to hold a high position within the peer group, despite not being particularly liked by others (Caravita et al., 2009; Prinstein & Cillessen, 2003; Vaillancourt, Hymel, & McDougall, 2003). Bullies may gain this popularity through power or fear, and may even be

admired by those who perceive their aggressive or rule-breaking behaviour as ‘cool’ (Rodkin, Farmer, Pearl, & Acker, 2006; Thunfors & Cornell, 2008).

In addition to the use of physical aggression to exert power and dominance over others, bullies are also associated with more pro-active and indirect forms of aggression (Salmivalli & Nieminen, 2002). This behaviour is typically strategic and systematic in nature, whereby peers can be indirectly manipulated or controlled (Rodkin & Roisman, 2010; Stoltz, Cillessen, van den Berg, & Gommans, 2016), or used as an instrument for the aggression (Garandeau & Cillessen, 2006). In this respect, bullies may be able to keep their bullying behaviours relatively hidden from those within the peer group and those outside; i.e., teachers or parents (Farmer et al., 2010; Vaillancourt et al., 2003). This effective use of aggression can explain how this group are able to maintain their popularity whilst continuing to victimise others; despite the mostly anti-bullying attitudes that are reported by children and adolescents (Caravita et al., 2009; Rigby & Johnson, 2006; Salmivalli & Voeten, 2004). Moreover, peers are less likely to openly condemn or oppose the behaviours of popular bullies; whether through fear of jeopardising their own position within the peer group, or the risk of becoming a target themselves (Garandeau & Cillessen, 2006; Garandeau et al., 2014a; Sentse, Dijkstra, Salmivalli, & Cillessen, 2013).

Conversely, adolescent bullies are reported to be less accepted and more rejected by peers than uninvolved adolescents (Boulton & Smith, 1994; Caravita et al., 2009; Sentse, Kiuru, Veenstra, & Salmivalli, 2014; Sentse et al., 2015a). Dodge et al. (2003) suggested that social rejection may inhibit children from developing pro-social behaviours or skills through social interactions, and they are therefore likely to continue with their negative/aggressive behaviours (Prinstein & Cillessen, 2003; Reijntjes et al., 2013b). However Dijkstra, Lindenberg, and Veenstra (2008) found that being highly popular weakened the association between bullying and peer rejection. Thus although popular bullies may be generally disliked, they may not be actively rejected (Farmer et al., 2010; Sentse et al., 2015a), and may have an average level of acceptance by peers (Reijntjes et al., 2013b). The contradictory reports regarding the social acceptance of adolescent bullies has led to claims that this group in fact have controversial status; i.e., they are liked by some and disliked by others (Sentse et al., 2013; Sentse, Scholte, Salmivalli, & Voeten, 2007; Warden & Mackinnon, 2003; Wolke & Stanford, 1999).

Adolescent bullies have been associated with a number of attributes that may be valued by peers; e.g., increased confidence and self-esteem, or being athletic and physically strong (Mayeux, Houser, & Dyches, 2011; Salmivalli, Kaukiainen, Kaistaniemi, & Lagerspetz, 1999; Vaillancourt et al., 2003). It may be these characteristics that influence the popularity of bullies, and not the 'bully status' per se.

2.3. Sociometric status of bully-victims

Of all the bullying roles, it is suggested that bully-victims have the least socially desirable qualities (Farmer et al., 2010), and suffer the worst social outcomes; particularly rejection by peers (Boulton & Smith, 1994; Cook et al., 2010; Veenstra et al., 2005). Bully-victims typically adopt a style of aggression that is reactive and under-regulated (Haynie et al., 2001; Unnever, 2005), and this ineffective use of aggression may explain differences in social status between bullies and bully-victims. Whereas bullies can strategically use their aggression to gain or maintain dominance, bully-victims may use aggression as a form of retaliation for their rejection (Farmer et al., 2010). These aggressive responses and continued rejection may make it harder for bully-victims to escape their role (Camodeca, Goossens, Terwogt, & Schuengel, 2002; Smith, Talamelli, Cowie, Naylor, & Chauhan, 2004), and are therefore less likely to experience successful social interactions or develop prosocial behaviours (Dodge et al., 2003).

Despite the social ostracism and adverse social outcomes associated with bully-victim status, this group has rarely been assessed within sociometric studies (Olthof et al., 2011; Postigo, González, Mateu, & Montoya, 2012), and particularly in relation to perceived popularity. Bully-victims share a number of social and emotional attributes with victims, such as poor social skills, emotional reactivity, and internalising problems (O'Brennan, Bradshaw, & Sawyer, 2009; Unnever, 2005), and these attributes may contribute to their rejection by peers. Bully-victims also show similarities to bullies in their victimisation of others, however the social outcomes of these two groups appear to be distinct (Farmer et al., 2010). It is unclear how adolescent bully-victims compare to bullies and victims in terms of social acceptance and perceived popularity, however it is likely that their dual role shows unique associations with sociometric status overall.

2.4. Sociometric status of victims

Like the perpetration groups, victims are typically reported to have lower social acceptance and suffer more rejection than uninvolved adolescents (Bouman et al., 2012; Veenstra et al., 2005). Victims often report being lonely, having fewer friends, and difficulty in making new friends (Haynie et al., 2001; Young & Sweeting, 2004). Unlike bullies however, this group lack popularity within the peer group (Prinstein & Cillessen, 2003; Sentse et al., 2015a), with one study finding only 11% of victims were nominated as popular by their classmates (Thunfors & Cornell, 2008). Those who are both unpopular and rejected are likely to be considered as easy targets by bullies (de Bruyn et al., 2010; Hodges, Boivin, Vitaro, & Bukowski, 1999; Sentse et al., 2015a), and bullies may believe that their actions will go unnoticed and/or unpunished by their peers (Pellegrini & Long, 2002; Sentse et al., 2015a). Low sociometric status has been reported to show a high predictive value for victimisation (Cook et al., 2010; Salmivalli, 2010), but similarly peers may avoid being associated with a 'known' victim due to fears of becoming targets themselves (Garandeau & Cillessen, 2006; Sentse et al., 2013). Thus having a low social status in adolescence may not only be a risk factor for being victimised, but also a consequence of this victimisation.

In the same way that bullies possess certain peer-valued attributes that may contribute to their popular status, there are individual characteristics associated with victims that other may consider to be 'undesirable'. Victims have been reported to be anxious, withdrawn, and emotionally sensitive (Arseneault et al., 2010; Frizzo, Bisol, & Lara, 2013; Reijntjes et al., 2010). They may lack confidence, self-esteem, and frequently blame themselves for their victimisation (Fox & Boulton, 2006; Garandeau & Cillessen, 2006; Graham & Juvonen, 1998; Wolke et al., 2017). These behavioural and emotional attributes may place these adolescents at increased risk of being noticed by others, and ultimately more vulnerable to being targeted by bullies (Juvonen & Graham, 2014). Similarly, victims are reported to lack social skills and confidence in social situations, and therefore may shy away from interactions with others (Fox & Boulton, 2006; Salmivalli & Isaacs, 2005); thus further inhibiting the forming of interpersonal relationships.

2.5. Social impact and bullying role

This chapter has highlighted what is known, or has been suggested, with regards to the sociometric status of bullies, bully-victims, and victims. However, the overall impact that these groups have on their social worlds is not clear. Social impact, as previously stated, has been used primarily for sociometric classification or to determine classroom hierarchies (Garandeau et al., 2014b), and rarely as a direct measure of sociometric status. Being highly visible or known amongst peers is important for determining social status (Ellis & Zarbatany, 2007), however it may also reflect a notoriety that is not always considered popular or accepted. Indeed high social impact has shown associations with high levels of acceptance and also high levels of rejection (Bukowski, Cillessen, & Velasquez, 2012).

Thus, all adolescents involved in bullying may have high social impact but for different reasons; whether directly related to their status as a bully, bully-victim, or victim, or influenced by other individual attributes that increase their visibility. This has not been explored previously; however it is likely that social impact would show different associations with social acceptance and perceived popularity for each of these bullying roles.

2.6. Summary and Conclusions

Social dominance and popularity within the peer group is seen as a priority for many adolescents. Having a high social status has been associated with peer-valued characteristics, but has also been linked to the perpetration of aggression. Similar findings have been shown for bullying behaviour specifically, whereby adolescent bullies are often the popular members of the classroom, despite often not being accepted by others. This highlights two similar yet distinct aspects of sociometric status; perceived popularity and social acceptance. For bullies, these appear to be opposing constructs, however this group are often controversial in their acceptance by peers; i.e., they are liked by some and disliked by others.

Those who are victimised however have been described to lack both popularity and acceptance within the peer group, and this low sociometric status is considered to be both a risk factor for victimisation, and also an outcome of this victimisation. Bully-victims especially are reported to have the worst social outcomes and experience the most peer rejection. Yet sociometric studies have rarely assessed these adolescents as a distinct group, and therefore it is unclear how their popularity and acceptance compares to those of bullies and victims.

Social impact is a distinct construct that reflects visibility in the peer group, regardless of how popular or liked an individual is. This construct is often overlooked in research, however it is likely that all roles involved in bullying have high social impact, despite their potentially distinctive sociometric profiles.

Finally, bullies, bully-victims, and victims are associated with social, emotional, and behavioural characteristics that may influence sociometric status. Thus, the extent to which this 'bullying status' directly determines sociometric status is unclear, especially when considering the contribution of other individual characteristics. The social abilities of adolescents, namely how social situations are approached and social information is processed, may also influence sociometric status, and may highlight further distinctions between the bullying roles. The next chapter will discuss social information processing, its effect on social outcomes, and its associations with bullying involvement in adolescence.

CHAPTER THREE – Bullying and Social Information Processing

3.1. Background

The way we make sense about others and ourselves is crucial for understanding and managing our social worlds (Fiske & Taylor, 2013). Social competence is not merely being able to communicate with others (Segrin, 2000), but consists of a wider range of skills relating to social perception and the flexibility to apply these in different social contexts (Imuta, Henry, Slaughter, Selcuk, & Ruffman, 2016; Rose-Krasnor, 1997). This social cognition is largely dependent on how social information is processed, and not only influences our social experiences, but affects our social development as a whole (Coie, Dodge, & Kupersmidt, 1990). Social information processing (SIP) reflects the way that social events or the behaviours of others are recognised and interpreted (Dodge, 1986; Dodge & Somberg, 1987). How these social cues are processed can determine our responses in these situations and, historically, maladaptive social adjustment and anti-social behaviours (i.e., aggression) have been associated with deficiencies in SIP (Crick & Dodge, 1994; Dodge & Crick, 1990; Happé & Frith, 1996). Research in this area is commonly based around the Social Information Processing (SIP) Model (Crick & Dodge, 1994; Dodge, 1986) as shown in figure 3.1 below. This model describes how inaccuracies or biases at any stage of SIP can lead to maladaptive social behaviour (Crick & Dodge, 1994; Dodge & Crick, 1990). This chapter will briefly outline the stages of the SIP model before referring specifically to how abilities/biases in the early stages of processing may be associated with bullying involvement.

3.2. The Social Information Processing (SIP) Model

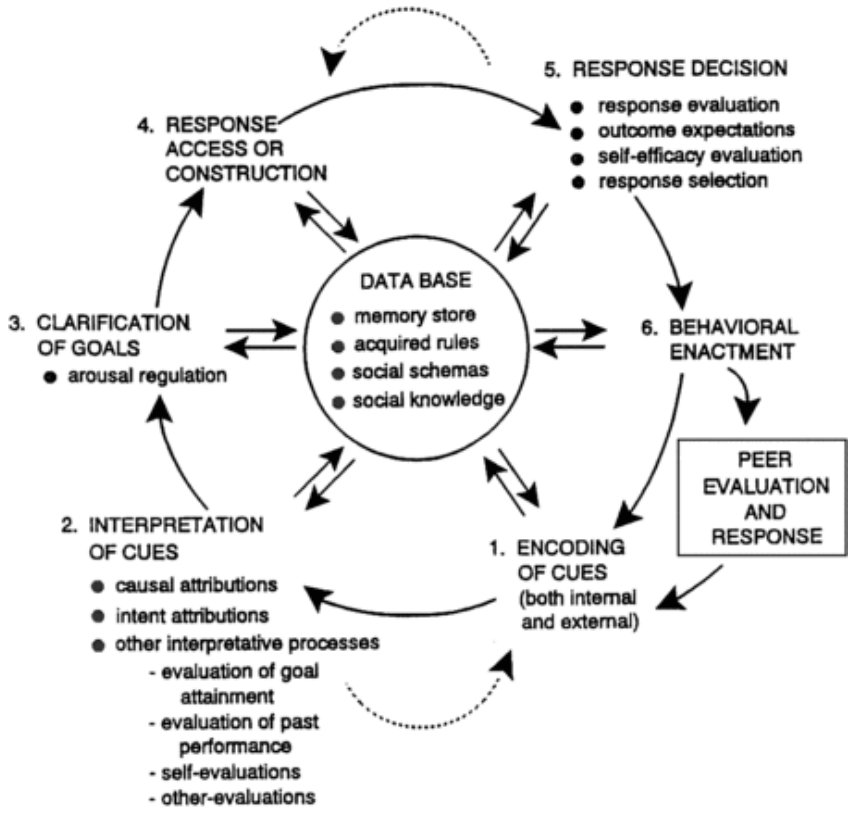

Figure 3.1 A reformulated social information-processing model of children's social adjustment (Crick & Dodge, 1994)

3.2.1. Stages 1-2: Encoding and interpretation

For any social event we are presented with a number of situational and individual cues, and we must first form an initial mental representation of the event by attending to these social cues (Crick & Dodge, 1994). This first stage of SIP therefore involves the encoding of social information, in which we essentially make sense of the situation and try to determine 'what' has happened (Lemerise & Arsenio, 2000). How we encode social information can be influenced by the expectations we have for social events or our memories of similar situations, and these can lead to biases in the types of information we choose to attend to or ignore (Dodge et al., 2003; Dodge & Tomlin, 1987). Recognising the feeling states of others is the most basic skill pertaining to the

encoding of social information (Fine, Izard, Mostow, Trentacosta, & Ackerman, 2003), and will be discussed in more detail in this chapter.

Once the selected information has been encoded, it must then be interpreted. For this next stage of SIP humans attempt to determine why a situation has occurred, or why others have behaved in a certain way (Crick, 1995; Crick & Dodge, 1994, 1996; Lemerise & Arsenio, 2000). Similar to encoding, memories of previous social experiences can create biases in how social information is interpreted (Baldwin, 1992; Schwartz et al., 1998); i.e., expectations of others and the types of attributions that are endorsed. With regards to bullying and victimisation, the most widely acknowledged biases are for interpreting situations or the behaviour/intentions of others as hostile (Camodeca & Goossens, 2005) and, for victims specifically, a tendency to favour self-blaming explanations as the cause of negative events (Graham & Juvonen, 1998). These attribution biases will be outlined further in this chapter and specifically in relation to bullying and victimisation.

3.2.2. Stages 3 and 4: Goal Clarification and Response Access

The way in which individuals respond to a situation or event is not solely based on how social information is encoded and perceived, but also on the type of goals we set for the immediate situation and determining what could be achieved from a chosen response (Arsenio & Lemerise, 2001; Erdley & Asher, 1996). Stage 3 of the SIP model refers to the process of identifying goals or desired outcomes, and these may either be predetermined or revised in response to the contextual information that is received (Crick & Dodge, 1994, 1996). Aggressive children may be more concerned with instrumental goals, such as control over others (Arsenio & Lemerise, 2004), and similarly bullying behaviour may be motivated by goals for social dominance, opportunities for sexual relationships, or material gains (Crick & Dodge, 1996; Vaillancourt et al., 2003; Volk et al., 2015). Victimisation on the other hand is likely to be associated with more avoidance goals (Schwartz, Dodge, & Coie, 1993); i.e., those that reduce the risk of experiencing further humiliation and physical or emotional harm.

In step 4, possible behavioural responses are then retrieved from long-term memory. Crick and Dodge (1994) proposed that response access can be influenced by; 1) the

number of responses available, 2) the content of the responses, and 3) the order in which available responses are accessed. With regards to the number of responses available and the content of these responses, it is highly likely that individuals who are socially maladjusted have a larger repertoire of maladaptive responses stored in memory, and it may therefore be difficult for these individuals to remember or to construct appropriate responses (Arsenio & Lemerise, 2004). Those with a history of victimisation for example may have a large database of withdrawal or escape responses from which to draw on, or for bully-victims, more aggressive or retaliatory responses to perceived provocation or threat. It has been suggested that learning about alternative responses may help to reduce victimisation (Salmivalli, 1999; Sapouna et al., 2010).

3.2.3. Stages 5 and 6: Response Decision and Behavioural Enactment

In the final stages of the SIP model, it is proposed that the accessed, or constructed, responses are evaluated, and then the chosen response is subsequently enacted. This evaluation process relies on the outcomes expected from the response, the appropriateness of the response, and the individual's confidence in being able to act out the chosen response (Arsenio & Lemerise, 2004; Crick & Dodge, 1996; Erdley & Asher, 1996, 1998). Aggressive children and adolescents have been reported to believe that aggression will lead to favourable outcomes (Crick & Dodge, 1996; Quiggle, Garber, Panak, & Dodge, 1992; Smithmyer, Hubbard, & Simons, 2000), and similarly bullies have been found to expect positive results from their behaviour towards others (Menesini et al., 2003; Pornari & Wood, 2010). Conversely, the avoidant responses that have been reported for victims may reflect a lack of confidence in being able to successfully act out more assertive responses (Schwartz et al., 1998). Following this evaluation process, and based on all the preceding stages of processing, the most positively evaluated response is finally selected and put into action.

3.3. Bullying and Social Cognition

Historically, and often based upon findings for aggressive youth, bullies were deemed to be unintelligent, socially inept, and maladjusted (Crick & Dodge, 1994, 1996, 1999; Randall, 1997). The theory of mind research conducted by Sutton and his colleagues (Sutton et al., 1999a; Sutton et al., 1999b) however introduced claims that bullies may possess a superior cognition and can process social information accurately, regardless of how they choose to use this information (Arsenio et al., 2009; Arsenio & Lemerise, 2001; Pornari & Wood, 2010). Competent or even superior social cognition may be reflected in the ability of bullies to manipulate others (Arsenio & Lemerise, 2001; Olthof et al., 2011; Sutton et al., 1999b), and may account, in part, for the often positive social outcomes associated with this group (de Bruyn et al., 2010; Garandeau et al., 2014a).

With regards to the social abilities of victims, some findings have suggested that this group show deficiencies in SIP and lack general social skills compared to non-victims (Camodeca & Goossens, 2005; Fox & Boulton, 2006; Perren & Alsaker, 2006); however this has not been consistently shown. Little is known about the social cognition of bully-victims, although there have been some reports that this group also have weaknesses for some aspects of SIP (Pouwels, Scholte, van Noorden, & Cillessen, 2015; Ziv, Leibovich, & Shechtman, 2013). It is uncertain whether this group are more similar to bullies or victims with regards to these social cognitive abilities.

Differences in the social cognition of bullies, victims, and bully-victims may be a product of varying skills and biases in social information processing; in particular the early stages of SIP. The main competencies and biases that can be found at these stages, and how they may relate to bullying involvement, are discussed below.

3.4. Emotion Recognition

The most fundamental and basic skill for social understanding is the ability to recognise and identify the thoughts and emotions of others (Fine et al., 2003). This ability is acquired by most during early childhood (Fabes, Eisenberg, Nyman, & Michealieu, 1991) and has been associated with social and emotional wellbeing in later childhood and adolescence (Izard et al., 2001; McClure, Pope, Hoberman, Pine, & Leibenluft,

2003; Pine et al., 2004). Goodfellow and Nowicki Jr (2009) reported that a deficiency for emotion recognition in 7-year-old boys was related to more behavioural difficulties and specifically more problems with peer relationships. Similarly Izard et al. (2001) reported a longitudinal relationship between having difficulties in perceiving emotions, and having poor peer relationships or reduced social competence. In terms of overall well-being, being unable to accurately label non-verbal emotion cues may also be associated with more internalising problems (Fine et al., 2003) and learning difficulties (Goodfellow & Nowicki Jr, 2009).

Ciucci, Baroncelli, and Nowicki (2014) differentiate between two processes involved in emotion perception; perception accuracy (correctly perceiving the emotion which is expressed), and perception bias (a tendency to perceive a particular emotion when a different one is expressed). Research has predominantly focussed on the abilities of infants and children for emotion perception, and little is known about how this ability continues to develop during adolescence (Thomas, De Bellis, Graham, & LaBar, 2007). Furthermore, attention has mostly been paid to how biases, particularly for perceiving anger, may lead to aggressive behaviour (Fine, Trentacosta, Izard, Mostow, & Campbell, 2004; Schultz, Izard, & Ackerman, 2000), and few studies have investigated the role of emotion recognition specifically in relation to bullying and victimisation (Ciucci et al., 2014).

In one study however, Woods, Wolke, Nowicki, and Hall (2009) found that compared to uninvolved children, bullies showed no deficits for emotion recognition. Relational victims made more errors than those not involved, specifically for faces expressing anger or fear; although this finding did not extend to physical victims. Thus, not all victimisation may be associated with weaknesses in emotion recognition, and no findings have been reported specifically for bully-victims.

3.5. Attributions

In a social context, attributions relate to the interpretations and evaluations that individuals make about the social information they receive. Attribution theory proposes that individuals search for explanations for events or situations in the social world, and respond behaviourally on the basis of these inferences (Dodge & Crick, 1990).

Accurate attributions rely on the flexibility of an individual's cognition, and the ability to adapt to different situations. Ross (1977) described a fundamental attribution error that occurs when contextual information is ignored whilst interpreting social information. In these instances, individuals may select an explanation for a social event merely because it is most prominent or accessed first, and regardless of whether there is missing or conflicting information. These errors can lead to chronic attribution biases in people's interpretations about the causes for (often negative) situations, the intentions of others, and the beliefs we have regarding our own behaviour or character (Crick & Dodge, 1996; De Castro, Veerman, Koops, Bosch, & Monshouwer, 2002; Dodge, 2006; Graham & Juvonen, 2001). These biases are often manifested in maladaptive responses or problem behaviours (Crick & Dodge, 1996; Dodge, 1993; Happé & Frith, 1996), and can have adverse effects on our social and psychological well-being (Anderson, Miller, Riger, Dill, & Sedikides, 1994; Graham & Juvonen, 2001; Perren, Ettekal, & Ladd, 2013). With regards to bullying and victimisation, the role of attributions in social information processing has gained increasing research attention (Georgiou & Stavrinides, 2008; Perren et al., 2013; Pouwels et al., 2015), and this thesis will focus on two prominent types of attributions in relation to social cognition and involvement in bullying: attributions of intent and causal attributions.

3.5.1. Intent Attributions: Hostile Attribution Bias

Hostile attribution biases were first introduced by Nasby, Hayden, and DePaulo (1980), and describe a propensity for interpreting situations or the behaviour of others as hostile, regardless of whether their intentions are benign, ambiguous or unknown. This led to increasing interest in the relationship between hostile attribution biases and aggressive behaviour (De Castro et al., 2002; Dodge, 2006; Dodge & Crick, 1990; Dodge & Somberg, 1987; Yeung & Leadbeater, 2007), whereby greater biases were found in aggressive youths, particularly those high in reactive aggression (Crick & Dodge, 1996; De Castro et al., 2002; Dodge & Somberg, 1987; Pornari & Wood, 2010). Aggression may initially be used in retaliation against a hostile peer (Crick, 1995), yet an inappropriate and persistent use of this aggressive response may lead to increased hostility and rejection by peers (Crick, 1995; De Castro et al., 2002; Dodge, 1980; Dodge et al., 2003). Hostile attributional biases can therefore maintain or exacerbate

poor social relationships, and restrict the development of non-aggressive or pro-social responses

The associations found between hostile attribution biases and aggression have often been generalised to bullying behaviour (Sutton et al., 1999a), however the proactive aggression more commonly used by bullies is less strongly related to hostile attribution bias than reactive aggression (Card & Little, 2006; Sutton et al., 1999a; Sutton et al., 1999b). There are conflicting findings within the extant literature, where hostile biases in bullies have been reported by some researchers (Camodeca & Goossens, 2005; Ziv et al., 2013), but not by others (Pornari & Wood, 2010; Pouwels et al., 2015). It could be that regardless of the accuracies or biases that bullies may have at the attribution stage of SIP, the proactive aggression used by this group does not rely on the intent of the victim (Polman, de Castro, Koops, van Boxtel, & Merk, 2007).

Those who are victimised may also show biases for attributing hostile intent to their peers (Camodeca & Goossens, 2005; Camodeca, Goossens, Schuengel, & Terwogt, 2003; Pornari & Wood, 2010; Ziv et al., 2013). Schwartz et al. (1998) proposed that children who are often threatened by their peers may be more sensitive to threatening cues, or more suspicious of their behaviour. Indeed victims of peer bullying have been reported to show reduced levels of specific and generalised trust in others (Betts, Houston, Steer, & Gardner, 2016; Carney, Jacob, & Hazler, 2011). Bully-victims have been reported to show hostile attribution biases (Pouwels et al., 2015; Ziv et al., 2013), yet findings for this group are scarce. An increased tendency for interpreting situations or other' behaviours as hostile, may be a result of their dual role as a bully and victim; and thus their more frequent exposure to hostile interactions (Dodge, 2006). It may also account for the predominantly reactive and 'hot-headed' aggression associated with this group (Berger, 2007; Salmivalli & Nieminen, 2002).

3.5.2. Causal Attributions: Attributions of Self-blame

Causal attributions are the explanations we endorse for why a particular event has occurred, or the causes behind our own and others' behaviour (Anderson & Riger, 1991; Georgiou & Stavrinides, 2008). They are essentially our attributions of blame. Three main types of blame attributions have been identified; behavioural self-blame,

characterological self-blame and external blame. External attributions are those that relate to factors outside of ourselves; i.e., we may blame an event on uncontrollable external circumstances, or in a social context, we may assign this blame to others; i.e., “that kid picks on everybody” (Batanova, Espelage, & Rao, 2014). External attributions can protect us from negative events that are perceived to be out of our control, and they can also avoid the guilt or shame associated with self-blame (Georgiou & Stavrinides, 2008).

Self-blame attributions are internally focussed and exist in two main forms; behavioural self-blame and characterological self-blame (Anderson et al., 1994; Janoff-Bulman, 1979). Behavioural self-blame attributions refer to our behaviour within a particular situation, and are often based upon factors that are unstable (i.e., not fixed) and that we have some control over. Behavioural self-blame may manifest itself in thoughts such as; “it was something I did in that situation”, “I was in the wrong place at the wrong time”, or “next time I’ll be more careful (Georgiou & Stavrinides, 2008; Graham & Juvonen, 2001). On the other hand, characterological self-blame is when we attribute blame to an uncontrollable aspect of our circumstances or character; i.e. “it is something about me” (Graham & Juvonen, 1998, 2001). The uncontrollable and fixed nature of these attributions can lead to expectations that the incident will keep re-occurring and may induce feelings of shame and hopelessness (Lewis & Waschbusch, 2008; Weiner, 1995).

Behavioural self-blame is considered to be the most adaptive response to a negative situation. It allows the individual to accept responsibility for their actions and adapt behaviour accordingly (Georgiou & Stavrinides, 2008). External blame can protect an individual from feelings of guilt or shame; however a bias for endorsing external attributions can also be maladaptive as it avoids accountability and does not promote behaviour change (Pornari & Wood, 2010). The stability and lack of control associated with characterological self-blame makes it the most maladaptive style of attribution; whereby self-deprecating thoughts and beliefs can become an automatic response which is then generalised to all negative events (Gladstone & Kaslow, 1995).

Much of the research relating attributional style has focussed on associations between persistent self-blame and internalising behaviours; such as low self-esteem (Skaalvik, 1994), social withdrawal (Burgess, Wojslawowicz, Rubin, Rose-Krasnor, & Booth-

LaForce, 2006), and depression (Anderson et al., 1994; Lewis & Waschbusch, 2008). Victimisation has also been associated with a bias for endorsing characterological self-blame attributions; i.e., “I'm the kind of person who deserves to be picked on”, in comparison to non-victimised children and adolescents (Graham, Bellmore, & Mize, 2006; Graham & Juvonen, 1998; Schacter, White, Chang, & Juvonen, 2015). A reciprocal relationship has been proposed, whereby persistent self-blame may increase vulnerability for subsequent victimisation, and similarly experiencing victimisation may increase the likelihood of blaming oneself (Schacter et al., 2015).

An association between victimisation and characterological self-blame has not consistently been shown. Georgiou and Stavrinides (2008) reported no differences between victims and other children in their self-blaming attributions. Similarly, Perren et al. (2013) found that peer victimisation did not predict subsequent self-blaming attributions; however this study did not separately assess behavioural and characterological self-blame. The uncontrollable and stable nature of characterological self-blame therefore may be more strongly associated with victimisation (Graham & Juvonen, 1998). There are few reports regarding the causal attributions made by bullies and bully-victims, however it has been reported that these groups select more external attributions for situations of peer violence (Georgiou & Stavrinides, 2008).

3.6. Summary

The study of aggressive behaviour has led to an increased interest into the associations between cognition, social information processing and social interactions. Despite the existing research on social information processing mechanisms related to bullying and victimisation, findings have been conflicting and lack direct comparison of those involved in different roles in bullying. The social information processing model has been highly influential for research on aggression in general. However, there is still a lack of research relating to abilities and deficiencies at the early two stages of processing in adolescence, and on bully-victims in particular. Bullies may not be deficient in emotional recognition, or show biases for making hostile attributions of intent; however there is still uncertainty of how early SIP processes may distinguish those who bully, those who are victimised, and those who assume both roles.

CHAPTER FOUR – Emotional traits and attributes, and their associations with bullying involvement

4.1. Overview

As discussed in the previous chapters, there has been some attention paid to the social attributes and outcomes associated with bullying perpetration and victimisation. Involvement in bullying may not only be associated with differences in how social information is processed, but may also be associated with differences in emotional traits and attributes.

In the extant literature it has been suggested that those who bully others may lack empathy and care for others, or find it hard to regulate negative emotional states such as anger (Garner & Hinton, 2010; Sullivan, Helms, Kliewer, & Goodman, 2010). With regards to victimisation however, there has been more attention on the emotional outcomes, i.e., anxiety or depression, that are often reported for victims (Arseneault et al., 2010; Winsper et al., 2012; Zwierzynska et al., 2013). There has been little research pertaining to the differences between bullies, bully-victims, and victims in relation to emotional traits and attributes. These differences could explain, in part, why some adolescents bully whilst others are victimised, and how these roles may be maintained or strengthened.

Emotion is likely to play an important role in determining our behaviour within social situations. Emotional attributes can impact upon the different stages of social information processing (SIP), and thus influence how we respond to this information. Bullying perpetration therefore may not be a result of poor SIP abilities per se, but rather of emotional traits that influence the way this information is used. This chapter will explore three components of emotional functioning; empathy, callous-unemotional (CU) traits, and affective instability (AI), and their associations with involvement in bullying. Empathy and CU traits have been explored previously in relation to bullying perpetration (Caravita et al., 2009; Ciucci & Baroncelli, 2014; Jolliffe & Farrington, 2006b; Zych, Ttofi, & Farrington, 2017), however it is unclear how these attributes may distinguish bullies, victims, and particularly bully-victims, for whom there is little

research (Zych et al., 2017). Affective instability (AI) is recognised as an important affective trait (or symptom cluster) associated with borderline personality disorder and other psychological disorders (Thompson, Berenbaum, & Bredemeier, 2011; Tragesser, Solhan, Schwartz-Mette, & Trull, 2007); but to date, AI has not been investigated with regards to bullying or victimisation. AI may be a highly relevant construct in relation to bullying involvement, as victims have been described as emotionally reactive, and similarly bullies have been reported to show poor regulation of negative affective states; i.e., anger (Frizzo et al., 2013; Garner & Hinton, 2010). Is Affective Instability therefore a characterеistic of all involved in bullying or specific to certain roles?

These emotional attributes will be described and discussed in relation to bullying and victimisation, before illustrating how they may be incorporated within social information processing.

4.2. Empathy

Successful social interactions and the development of our social intelligence rely partly on our ability to identify and take into account the thoughts and feelings of others (Kaukiainen et al., 1999). Empathy is regarded to be both an emotional trait and a skill, and is comprised of separate cognitive and affective components (Davis, 1994; Mitsopoulou & Giovazolias, 2013). Similar to emotion recognition (discussed in chapter three), cognitive empathy is our recognition and identification of 'what' others are thinking or feeling, and largely reflects competencies in social cognition and perspective taking (Gini, Albiero, Benelli, & Altoè, 2007). Affective empathy reflects our ability to sympathise with or show concern for 'how' others are feeling, and thus the ability to share or experience these feelings (Jolliffe & Farrington, 2011; Lovett & Sheffield, 2007).

Empathy has been investigated within several research domains, namely those relating to anti-social or aggressive behaviours (Cohen & Strayer, 1996; Jolliffe & Farrington, 2004; Lovett & Sheffield, 2007). The associations reported for empathy and bullying perpetration have largely echoed those found for aggression, whereby bullies are thought to exhibit lower levels of empathy than non-bullies (Kokkinos & Kipritsi, 2012;

Mitsopoulou & Giovazolias, 2015; van Noorden, Haselager, Cillessen, & Bukowski, 2015). When considering the separate cognitive and affective components of empathy, it is predominantly affective empathy where bullies are reported to show the most deficiencies (Gini et al., 2007; Jolliffe & Farrington, 2006b), whereas findings for cognitive empathy show inconsistencies across reports (van Noorden et al., 2015). Espelage, Mebane, and Adams (2004) found that higher levels of bullying were related to lower levels of cognitive empathy, while the opposite was reported by Caravita et al. (2009). Conflicting reports may reflect the assessment of bullies and bully-victims within a single group. 'Ring-leader bullies' have been found to display competent Theory of Mind skills (Stellwagen & Kerig, 2013; Sutton et al., 1999a), and their ability for perspective taking may reflect a more proficient social cognition in comparison to bully-victims (Gasser & Keller, 2009). Moreover, the often strategic or subtle use of aggression used by bullies, and their manipulation of others, may further suggest that this group possess a good level of perspective taking skills (Garandeau & Cillessen, 2006; Kaukiainen et al., 1999).

Fewer studies have investigated the relationship between empathy and victimisation, and findings have also been inconsistent (Zych et al., 2017). In their systematic review, van Noorden et al. (2015) reported that across studies, overall no associations were found between empathy and victimisation (Kokkinos & Kipritsi, 2012; Raskauskas, Gregory, Harvey, Rifshana, & Evans, 2010). With regards to cognitive empathy specifically, mostly negative associations have been reported (Gini, 2006b; Kokkinos & Kipritsi, 2012). Victims have been suggested to show lower social competence than non-victims (Fox & Boulton, 2006; Haynie et al., 2001), and this could be indicative of a reduced ability for cognitive empathy. However it has also been reported that victims' perspective taking skills do not differ significantly from those of bullies (Gasser & Keller, 2009). Victims are often described as being emotionally sensitive (Frizzo et al., 2013), and we may therefore expect that victims exhibit higher levels of affective empathy than non-victims, and particularly those who bully. Support for this was provided by Caravita, Di Blasio, and Salmivalli (2010) who found positive associations between affective empathy and victimisation, however negative associations have also been reported (Kokkinos & Kipritsi, 2012). As noted above, inconsistencies in findings may be due to the way in which victims were classified, thus resulting in the inclusion of bully-victims within this group (Gasser & Keller, 2009).

There is very little knowledge regarding empathy in bully-victims specifically (Wolke et al., 2016; Zych et al., 2017), however a recent meta-analysis found that overall, bully-victims have lower odds of scoring high in empathy than those uninvolved in bullying (Zych et al., 2017). Like victims, bully-victims have been reported to lack social competence (Gasser & Keller, 2009; Haynie et al., 2001; Veenstra et al., 2005), and this may also indicate a lack of ability for cognitive empathy.

To summarise, the knowledge base on empathy and its associations to bullying perpetration and victimisation is highly contradictory. This may be due to the measures used to assess empathy; more specifically whether empathy is measured as a single construct or split into its cognitive and affective components. Finally, past findings for bullies and victims may be distorted and show inconsistencies due to the inclusion of bully-victims into either a perpetration or victimisation category (or indeed both). The lack of knowledge relating to empathy in bully-victims highlights a need for further research to assess these individuals as an independent and distinct group.

4.3. Callous-Unemotional Traits

There has been an increased interest in the presence and influence of callous-unemotional (CU) traits in relation to aggressive behaviour and conduct disorder (Frick, Cornell, Barry, Bodin, & Dane, 2003a; Kimonis et al., 2014; Orue, Calvete, & Gamez-Guadix, 2016). CU traits have been defined as the affective dimension of psychopathy (Frick & White, 2008; Panayiotou, Fanti, & Lazarou, 2015), and are believed to be inversely related to empathy (Muñoz, Qualter, & Padgett, 2011; Zych et al., 2017). There are three facets of callousness described by CU traits; a lack of guilt (uncaring), a shallow or deficient affect (unemotional), and a cunning use of others for personal gain (callousness) (Frick & Nigg, 2012). The uncaring and unemotional dimensions in particular are negatively associated with empathy (Kimonis, Frick, Munoz, & Aucoin, 2008a).

Bullies have been described as cold, unemotional, and Machiavellian in nature (Ciucci & Baroncelli, 2014; Sutton & Keogh, 2001). These qualities are consistent with those high in CU traits, and therefore it is not surprising that, overall, adolescent bullies have also been found to have elevated CU traits (Ciucci & Baroncelli, 2014; Fanti, Frick, &

Georgiou, 2009; Viding, Simmonds, Petrides, & Frederickson, 2009). The association between CU traits and bullying perpetration has been reported to exist over and above the relationship between bullying and conduct problems (Viding et al., 2009). In their meta-analysis, Zych et al. (2017) found that across existing findings, bullies generally had higher odds of scoring higher in CU traits compared with non-bullies. The consistency across findings suggests that these traits may be highly relevant to bullying perpetration, however the number of studies is still relatively small (Zych et al., 2017). Even fewer studies exist regarding CU traits in those who are victimised. Ciucci and Baroncelli (2014) found that CU traits and victimisation in adolescence were not related, however Zych et al. (2017) reported that victims may in fact have higher levels of these traits than non-victimised youth. Only one study has reported findings for adolescent bully-victims specifically, and found, like bullies, this group also show high levels of CU traits (Fanti et al., 2009).

In summary, research has consistently shown strong associations between CU traits and perpetration of bullying. Existing reports have consistently shown elevated levels of CU traits in bullies, and it is likely that these findings could also extend to adolescents identified as bully-victims. There is a lack of knowledge relating to associations between CU traits and victimisation, and therefore it is unclear whether high levels of these traits are specific only to those who bully.

4.4. Affective Instability

Affective instability (AI) has been recognised as a core trait (or symptom cluster) of borderline personality disorder (Conklin, Bradley, & Westen, 2006; Tragesser et al., 2007) and internalising disorders, i.e., anxiety and depression (Bowen, Clark, & Baetz, 2004; Farmer & Kashdan, 2014; Thompson et al., 2011). There is no established definition of AI (Miller & Pilkonis, 2006; Trull et al., 2008), though historically it has been described as an affective construct comprising frequent and intense fluctuations in emotion (Thompson et al., 2011). Recently, AI has been considered to also incorporate difficulties in regulating emotions, and thus extends the definition of AI to encompass three core elements of affect; lability (mood fluctuations), high intensity and low control (Marwaha et al., 2014). AI has been associated with interpersonal problems

(Koenigsberg et al., 2001; Tragesser et al., 2007), and dysregulation of affect may be central in this association by distorting cognitive processes (Tragesser et al., 2007).

Victims have been described as emotionally sensitive, reactive and poorly regulated (Frizzo et al., 2013; McLaughlin et al., 2009; Rosen et al., 2012); aspects of emotion that appear central to AI. Victimisation has also been associated with an increased risk for developing borderline personality disorder (Sansone, Lam, & Wiederman, 2010; Wolke, Schreier, Zanarini, & Winsper, 2012), and depression (Copeland, Wolke, Angold, & Costello, 2013; Zwierzynska et al., 2013). Therefore, the significance of AI may therefore extend beyond clinical domains and reflect an important affective construct in the development and maintenance of victimisation. Children who have difficulty regulating emotions are likely to experience intense emotional arousal as a result of their victimisation (Mahady Wilton, Craig, & Pepler, 2000; Rosen, Milich, & Harris, 2009), and this may lead to more public displays of emotion (Haynie et al., 2001). Therefore, the poor control of intense negative emotions may initially make children and adolescents vulnerable for being targeted by bullies, but also at increased risk of further victimisation (Rosen, Milich, & Harris, 2007; Rosen et al., 2012).

There have also been reports that bullies have poor emotion self-regulation skills (Garner & Hinton, 2010). There are consistent findings that difficulties in the regulation of anger are associated with aggression or other externalising behaviours (Eisenberg et al., 2001; Sullivan et al., 2010). The often strategic, manipulative, and subtle forms of aggression used by pure bullies, and as previously stated the 'ring-leader' bullies (Salmivalli & Nieminen, 2002; Schwartz, 2000), may suggest that AI may not be a common trait found in this group. Bully-victims on the other hand are characterised by a more reactive and impulsive style of aggression (Salmivalli & Nieminen, 2002; Schwartz, 2000) and, like victims, have been found to show poor emotion regulation, a tendency for emotional outbursts, and described as emotionally unstable (Haynie et al., 2001; O'Brennan et al., 2009; Unnever, 2005). AI may therefore also highlight an aspect of emotional functioning that distinguishes bully-victims from those who purely bully others.

To summarise, there has been no investigation of affective instability with regards to bullying or victimisation. Moreover, this affective trait may highlight an important distinction in the emotional attributes and/or processes of bullies and bully-victims, and

afford some explanation for differences in the psychological, behavioural, and social outcomes between these groups.

4.5. Emotion and Social Information Processing

Bullies, bully-victims, victims and uninvolved adolescents may differ in their abilities with early social information processing (SIP) (as discussed in chapter three), but also in the emotional traits or attributes described in this chapter. However SIP and emotion are not distinct and both domains are thought to contribute towards social competence (Crick & Dodge, 1994; Dodge, 1986; Eisenberg, Fabes, Guthrie, & Reiser, 2002; Eisenberg et al., 1997).

Emotional processes may influence how we approach, manage, and respond to social information, yet are rarely incorporated within cognitive theories of information processing. Lemerise and Arsenio (2000) suggested that a limitation of the Social Information Processing (SIP) Model is its lack of consideration for emotion and emotional processes. These authors focused on a number of emotional attributes; including emotionality (or temperament), arousal, regulation, and mood states (Arsenio & Lemerise, 2001; Lemerise & Arsenio, 2000), and described how they may influence different stages of SIP.

Although Lemerise and Arsenio (2000) provided a strong rationale for integrating emotion and SIP, there has been relatively little development of these ideas since. In addition to the emotional processes described by Lemerise and Arsenio (2000), there are a number of emotional traits and attributes, such as those discussed in this chapter, that may influence how social information is processed. A model of how affective instability, empathy (cognitive and affective), and CU traits may impact on different stages of SIP is proposed in figure 4.1 below.

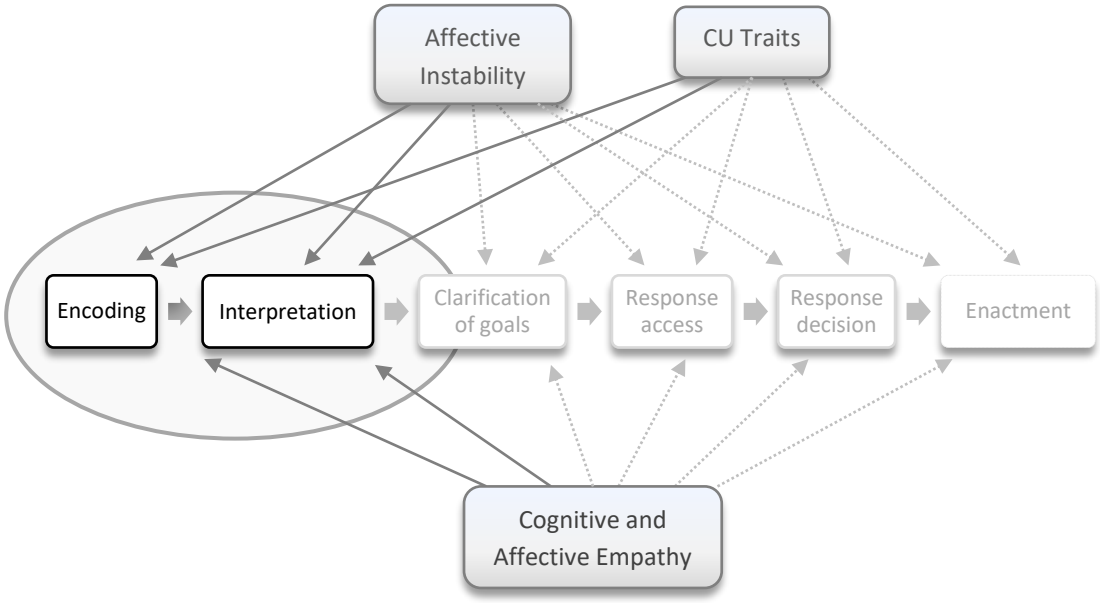

Figure 4.1 Proposed integration of emotional attributes within the Social Information Processing Model.

In contrast to temperament (e.g. mood), which is concerned with a person's average level of affect, affective instability (AI) is commonly used to describe the variability of this affect; i.e., how rapidly it fluctuates (Thompson et al., 2011). The intensity and control components of AI show some similarities to the emotional processes addressed by Lemerise and Arsenio (2000), namely arousal and regulation; however these aspects of AI are commonly more random and unpredictable in nature (Cowdry & Gardner, 1991; Miller & Pilkonis, 2006). AI may influence SIP in similar ways to temperament and dysregulation by overriding cognitive processes (Tragesser et al., 2007) and thus in early SIP, may influence what information is attended to and how it is interpreted.

Empathy may also influence SIP. As noted earlier, empathy (and particularly cognitive empathy) is described as the ability to identify the thoughts and feelings of others (Davis, 1994), and is therefore likely to be valuable during the encoding of social information. Cognitive empathy shows parallels with emotion recognition, whereby failing to accurately read affective cues in others, often also reflects a reduced ability for perspective taking (Blair & Coles, 2000; Sharp, 2008). Moreover it has been found that

for some children, emotion recognition training has been associated with improvements in empathy overall (Dadds, Cauchi, Wimalaweera, Hawes, & Brennan, 2012). Empathy may also be important for accurately interpreting social information; for example recognising why others might have behaved in a certain way, or identifying how a situation may be perceived differently by others. Empathic children have been reported to show better social understanding in their interpretations of peers' behaviours, and the intentions underlying these behaviours (Findlay, Girardi, & Coplan, 2006).

Finally, having high levels of CU traits may influence the manner in which social cues are attended to and how they are perceived. Callous traits can be indicative of a selfish and egocentric personality style (Frick & Ellis, 1999), and therefore it may be possible that CU traits could reduce the attention paid to others; thus affecting the accuracy in which social information is encoded. These traits are not considered to represent a lower cognitive ability per se, but a callous and uncaring cognitive style in attitudes and conduct toward others (Frick & Viding, 2009; Pardini, Lochman, & Frick, 2003). Therefore CU traits may not have a large impact on the encoding of social information, but more how this information is handled. With regards to interpreting social information, CU traits may distort an individual's concept of what is right or wrong (Pardini & Byrd, 2012), thereby altering their perceptions of others' behaviours or the motivations underlying this behaviour. However individuals with callous traits are described to be manipulative, and this ability to manipulate others may rely on a relatively competent social cognition (Sutton et al., 1999b). Therefore it is also possible that CU traits could potentially improve accuracy in the early stages of SIP.

To summarise, emotional attributes can influence our behaviours; either directly, or by shaping the way information is processed and thus responded to. The impact that affective instability, empathy, and callous-unemotional traits may have on SIP can lead to both competencies and biases at the early stages of the model. Bullying and victimisation has been associated both with differences in SIP abilities, i.e., emotion recognition or attribution biases (see chapter 3), and also the emotional attributes described here. These cognitive and emotional processes may therefore not be completely independent in their associations with bullying involvement, but may show distinct connections within each of the roles involved; bullies, bully-victims, and victims.

4.6. Overall Summary and Conclusions

There remains debate regarding the emotional characteristics that may distinguish adolescents involved in bullying; specifically how emotional attributes and traits may differ in bullies, bully-victims, and victims, and in comparison to those uninvolved. Despite the focus of many anti-bullying interventions on increasing empathy in perpetrators, findings relating to empathy and bullying/victimisation have been highly contradictory. Callous-unemotional traits have shown consistent associations both with aggression and bullying specifically, however there is still a lack of research in relation to bully-victims versus bullies. Affective instability has shown prominence in clinical domains and emerged as an important precursor or symptom to a range of psychological disorders. This affective trait encompasses some aspects of emotion that have been associated with victimisation, and victims have been reported to be at risk of developing later internalising disorders, i.e., depression, for which affective instability is a common feature. Therefore affective instability may also be characteristic of those who are victimised, yet there has been no study of this trait with regards to bullying involvement.

Finally, these aspects of emotion may influence bullying and victimisation directly or through the disruption of social information processing. Differences shown between the bullying roles in their abilities and deficiencies in the early encoding and interpretation stages of processing may be a result of the interplay between these cognitive and emotional processes. These may also partly account for differences in the behavioural, social, and psychological outcomes reported for each role

CHAPTER FIVE: Research Questions

Chapters seven, eight, and nine of this thesis comprise three research studies undertaken to investigate the social and emotional attributes associated with bullying involvement in adolescence. This chapter will highlight the rationale behind each study and present the specific research questions that will be addressed.

Firstly, this thesis explores the influence of bullying involvement on sociometric status in adolescence. More specifically, bullies, bully-victims, victims, and uninvolved adolescents will be compared on three aspects of sociometric status; social impact, social acceptance, and perceived popularity. In addition, the extent to which these roles predict sociometric status over and above other individual characteristics will be investigated. Secondly, the social information processing abilities and styles of each role will be explored, with specific reference to the early encoding and interpretation stages of the Social Information Processing Model. Finally, this thesis investigates how emotional traits and attributes may distinguish bullies, bully-victims, victims, and those uninvolved, and how such attributes can influence the social behaviours and outcomes associated with these roles. These studies focus primarily on the perpetrators of bullying (bullies and bully-victims), and the ways in which these roles may differ to the non-bullying roles, i.e., victims and those uninvolved, in their social and emotional attributes. By drawing comparisons between all roles, the differences between bullies and bully-victims can also be explored, thereby further exploring the ways that bully-victims are distinct from 'pure' bullies and 'pure' victims.

5.1. Study One: Comparisons between adolescent bullies, victims, and bully-victims on perceived popularity, social impact, and acceptance

As reviewed in chapter two, aggression has shown strong associations with popular status amongst adolescents and this has also been found with those who perpetrate bullying (Caravita et al., 2009; Cillessen & Rose, 2005; Prinstein & Cillessen, 2003; Vaillancourt et al., 2003). However findings are mixed whether bullies, like aggressive

youth, experience lower levels of acceptance by peers, despite this increased perceived popularity. Conversely those who are victimised have been found to be overall lower both in perceived popularity and acceptance (Caravita et al., 2009; de Bruyn et al., 2010). However few sociometric studies have assessed bully-victims directly and therefore it is unclear how this group differs to bullies and victims. Exploring differences in the sociometric profiles of adolescent bullies, bully-victims, victims, and those uninvolved can highlight the motivations underlying bullying in adolescence, and potential risk factors for becoming involved in, or maintaining involvement in bullying.

Research Questions:

- How does sociometric status (social impact, social acceptance, and perceived popularity) differ between adolescents involved in bullying (bullies, bully-victims, and victims) and those uninvolved?
- How does bullying role influence sociometric status compared with other individual (e.g. emotional and behavioural problems, self-esteem) and demographic factors (e.g. ethnicity, pupil premium)?

5.2. Study Two: Differences in the Early Stages of Social Information Processing for Adolescents Involved in Bullying

As reviewed in chapter three, the social abilities of those who perpetrate bullying have been the subject of extensive debate. With reference to the Social Information Processing Model (Crick & Dodge, 1994), bullies have been reported to show deficiencies in encoding and interpreting social cues, and it is these biases that are thought to account for their anti-social and deviant behaviour (Crick & Dodge, 1996, 1999). However, bullies' often strategic manipulation of situations and others suggests that this group could in fact process social information relatively accurately (Sutton et al., 1999a; Sutton et al., 1999b). Victimised adolescents have also shown biases in their interpretations of social situations (Ziv et al., 2013), and the reactive-aggressive nature of bully-victims may be most indicative of these. Thus, it is still unclear whether bullying or victimisation, or both, are associated with deficiencies and biases at the

early stages of social information processing (encoding and interpretation); and how these abilities may differ between bullies, bully-victims, victims, and those uninvolved.

Research Questions:

- Is bullying perpetration associated with deficiencies at the early stages of social information processing (encoding and interpretation)?
- Do victimised adolescents show the most deficits and biases in their interpretations of emotions and social events?
- How do adolescent bullies, bully-victims, victims, and those uninvolved differ in their encoding and interpretation of social information?

5.3. Study Three: Bullying in adolescence: how do emotional traits distinguish between those involved?

Bullies are often described to have dysfunctional emotional traits, particularly reduced levels of empathy (Jolliffe & Farrington, 2006b). Findings are mixed, and victimised youth have also been reported to show deficiencies; in particular with their regulation of emotions (Frizzo et al., 2013). Moreover, bullies have been found to have increased levels of callous unemotional (CU) traits, that may explain their often planned and strategic victimisation of others (Ciucci & Baroncelli, 2014; Zych et al., 2017). However it is unclear whether callous-unemotional traits are also found in those who are victimised; and particularly in bully-victims, who have dual experience of perpetration and victimisation. This study therefore investigated differences between the bullying roles and also uninvolved adolescents in empathy, CU traits, and affective instability; an affective trait that has not previously been studied in relation to bullying or victimisation. These emotional attributes may influence how we respond to social information (Lemerise & Arsenio, 2000), and account for some of the behavioural differences between bullies, bully-victims, victims, and those uninvolved.

Research Questions:

- How do emotional attributes and processes (empathy, callous-unemotional traits, and affective instability) differ between those involved in bullying and uninvolved adolescents?
- Are the emotional attributes of bully-victims most similar to those of bullies or victims; or is this group associated with a distinct emotional profile?

5.4. Supplementary Analyses: Associations between Affective and Social Information Processing

A criticism of social information processing (SIP) theories is their lack of consideration and integration of emotional influences (Arsenio & Lemerise, 2001; Lemerise & Arsenio, 2000). Despite the suggestions from these authors in how emotional processes can be incorporated into the SIP Model, there has been little research on this issue since. Referring back to the integrated SIP and emotion model proposed in chapter four, this brief chapter explores the associations between the SIP measures from study two and the emotional attributes assessed in study three. Additionally, the influence of these emotional attributes in predicting abilities at the early stages of social information processing are investigated.

Research Questions:

- Do callous-unemotional traits, empathy and affective instability show associations with the encoding (emotion recognition) and interpretation (attributions of intent and attributions of blame) stages of social information processing?
- To what extent do these emotional attributes contribute in predicting abilities or biases in encoding and interpreting social information?

5.5. Summary of the Main Features of the Three Studies

Table 5.1 Summary of variables and analyses used across the three studies

	Study 1	**Study 2**	**Study 3**	**Supplementary Analyses**
Outcome Variable(s)	Social impact; Social acceptance; Perceived popularity	Emotion recognition; Attributions of intent; Attribution style	Empathy; Callous-unemotional traits; Affective instability	Emotion recognition; Attributions of intent; Attribution style
Predictor Variable(s)	Bullying role; Gender	Bullying; Victimisation; Bullying role; Gender	Bulling role; Gender	Empathy; Callous-unemotional traits; Affective instability
Control Variable(s)	Age; Ethnicity; Pupil premium; Attendance; Parent education	Age; Ethnicity; Pupil premium; Attendance; Parent education	Age; Ethnicity; Pupil premium; Attendance; Parent education	Age; Ethnicity; Pupil premium; Attendance; Parent education
Analyses	ANCOVA; Multiple regression Bonferroni post-hoc tests	Three-way ANOVA ANCOVA Bonferroni post-hoc tests	ANCOVA; Bonferroni post-hoc tests	Correlations; Multiple regression

CHAPTER SIX – Methodology

6.1. Overview

The purpose of this chapter is to provide an overview of the BASE (Bullying, Appearance, Social information processing, and Emotions) Study. This was a two-stage study (figure 6.1) conducted in secondary schools and provided the data for the three empirical studies included in this thesis.

In stage one, pupils aged 11-16 years from the recruited schools were screened for involvement in bullying, and were subsequently categorised into bullying groups; bullies, victims, bully-victims or uninvolved. The main aim of this screening stage was to obtain the sample of adolescents to assess in stage two, in which a minimum 100 pupils per bully-group were required (for statistically powered comparisons to be made). Taking into account the low rate of self-reported bullying perpetration (approximately 4-5%) and in particular of self-identified bullies (< 2%) (Tippett, Wolke, & Platt, 2013; Wolke, Lereya, Fisher, Lewis, & Zammit, 2014), a mixed method design was adopted, using both self-reports and peer nominations. Considering an attrition rate of approximately 30% within school-based studies conducted over two time points (stage one and stage two); a minimum target of 3,700 participants was sought for stage one.

This research took place over a period of approximately one year; from the initial contact with schools in July 2014 to the final day of testing in July 2015, the two stages were conducted approximately two months apart. Prior to school recruitment, ethical approval was received by the University of Warwick's ethics committee for this study and all materials used.

This chapter will provide the details of the design, organisation and implementation of both stages of the project.

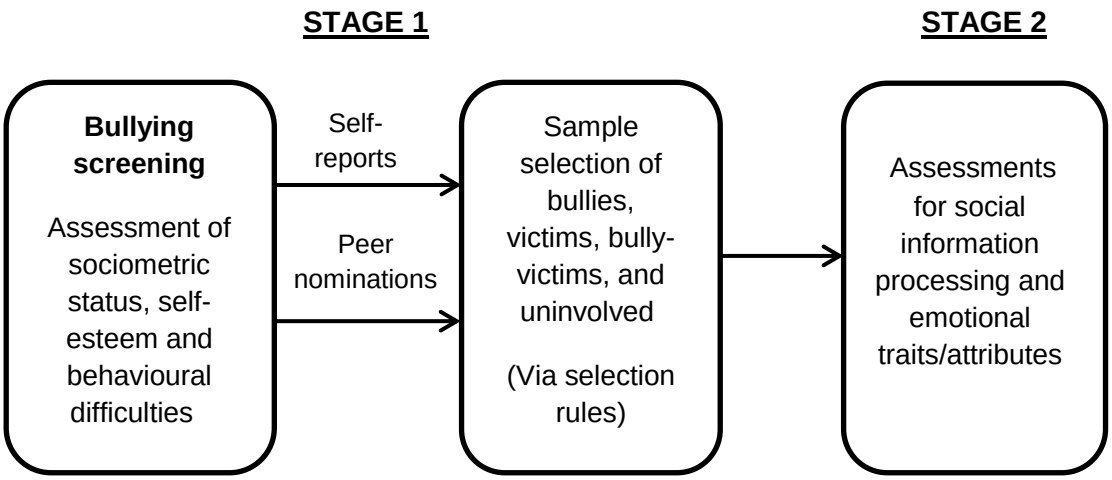

Figure 6.1 Overview of the study design

6.2. Stage 1: Screening

6.2.1. School recruitment

In July 2014, letters and information sheets (Appendix A) were posted to schools within Coventry and Warwickshire inviting them to take part in a research project about peer relationships and well-being. Recruitment extended within Central England to West Midlands and Staffordshire (figure 6.2), and all schools received follow-up calls, emails and/or meetings with staff to discuss the details of the project further.

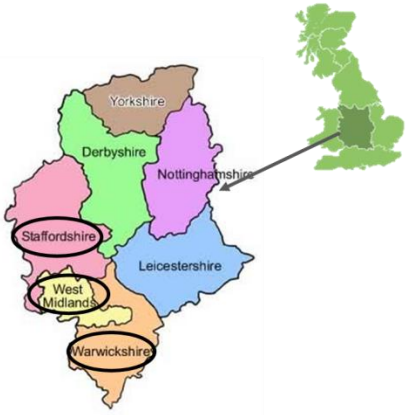

Figure 6.2 Areas of school recruitment in Central England

Initially six schools agreed to participate in the project however one school subsequently dropped out due to time and resource constraints. Table 6.1 shows the demographic characteristics of the participating schools; all of which showed economic, cultural and ethnic diversity amongst the pupils enrolled.

6.2.2. Sample

There was a total of 3,883 pupils enrolled across the five schools, of which 2,782 (70.7%) completed stage 1 (see figure 6.3). The main reasons for dropout was absenteeism (*n*=288), parent and/or child refusals (total *n*=300), and several year 10 and 11 pupils were unavailable due to revision and exams (*n*=329). Prior to scheduling, schools identified pupils whose special educational needs (*n*=32) or poor English language ability (*n*=2) would prevent them from being able to complete the assessment. These pupils were therefore not assessed.

Of those pupils who completed phase one, 2754 pupils had complete data for the bullying/victimisation items (table 6.2).

Table 6.1 Demographics of schools recruited

	School 1	**School 2**	**School 3**	**School 4**	**School 5**
	Rugby, Warwickshire	Kineton, Warwickshire	Coventry, W. Midlands	Stafford, Staffordshire	Birmingham, W. Midlands
No. pupils participated	422	539	564	535	694
Total no. pupils on roll	839	820	1243	868	1185
Boys on roll	0%	51.6%	49.8%	50.3%	54.2%
Girls on roll	100%	48.4%	50.2%	49.7%	45.8%
Pupils with statement of educational needs (SEN) or education health and care (HEC) plan	0%	1.8%	0.8%	0.8%	4.6%
Pupils whose first language is not English	16.6%	1.2%	27.4%	4.1%	5.5%
Pupils eligible for free school meals	5.8%	16,2%	26.3%	14.3%	39.3%

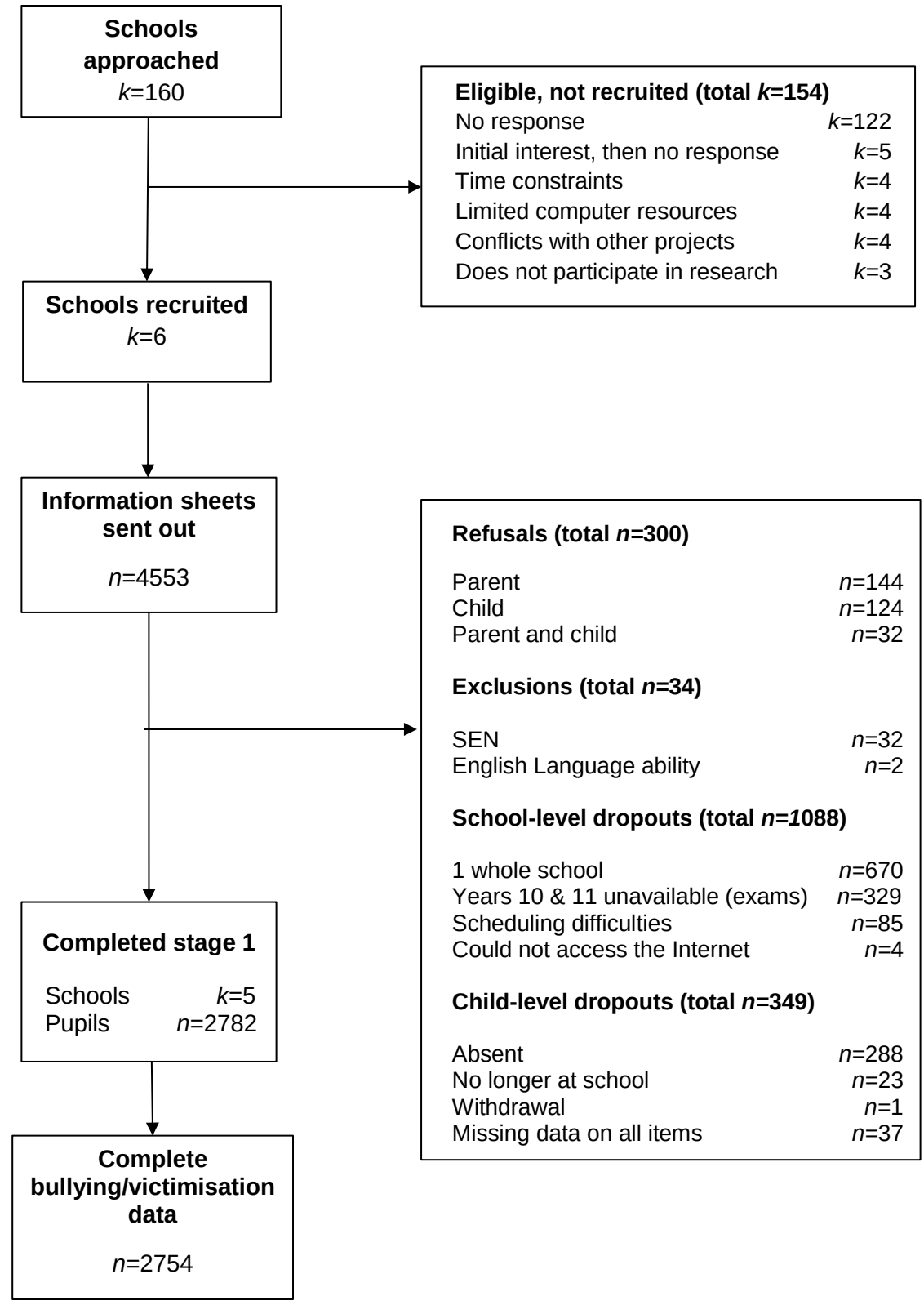

Figure 6.3 STROBE diagram of recruitment and drop-outs for stage one

Table 6.2 Descriptive data for stage one participants, split by bullying group. All numbers are percentages, unless otherwise stated

			Bully Group			
		Total	**Bully**	**Bully-Victim**	**Victim**	**Uninvolved**
	N (%)	2754	250 (9.1)	402 (14.6)	660 (24.0)	1442 (52.4)
Sex	*Female*	56.8	8.5	12.5	24.8	54.2
	Male	43.2	9.8	17.4	22.8	50.0
Ethnicity (%)	*White British*	82.6	8.7	14.8	23.9	52.6
	Minority	17.4	10.3	13.7	23.8	52.2
Age (years)	*M*	13.51	13.83	13.72	13.37	13.45
	(SD)	(1.35)	(1.37)	(1.25)	(1.35)	(1.36)
School year	*7*	25.2	6.8	11.1	27.5	54.6
	8	24.1	9.0	11.6	24.4	55.0
	9	21.5	8.3	21.6	21.7	48.4
	10	19.1	10.9	15.8	23.2	50.1
	11	10.1	13.4	13.4	20.2	53.0
Pupil Premium (%)	*No*	79.3	8.4	13.0	23.2	55.4
	Yes	20.7	12.5	21.2	27.7	38.6
Attendance (%)	*M*	95.56	95.01	94.87	95.17	96.04
	(SD)	(4.69)	(4.71)	(5.43)	(5.00)	(4.24)
Parent Education (%)	*≤11 years*	12.3	9.7	18.2	25.6	46.5
	>11 years	87.7	9.0	14.1	23.7	53.2

Table 6.3. Descriptive data for stage one participants, split by bully and victim type

		Bully or Victim Type						
		Uninvolved	**Direct Bully**	**Relational Bully**	**Cyber Bully**	**Direct Victim**	**Relational Victim**	**Cyber Victim**
	%	75.2	1.1	0.6	0.4	6.6	10.5	5.5
Sex %	*Female*	74.6	0.7	0.6	0.5	5.9	10.8	6.9
	Male	76.0	1.7	0.7	0.3	7.5	10.2	3.6
Age (years)	*M*	13.50	14.01	13.14	14.51	13.36	13.42	13.76
	(SD)	1.35	1.32	1.22	1.61	1.29	1.34	1.36

6.2.3. Stage 1: Measures

Demographic variables

Pupils self-reported their sex, age (date of birth), ethnicity, who they lived with most of the time and their parent's highest level of education (i.e. high school, college, university). Ethnicity was dichotomised into White British and other due to the low numbers of pupils in each of the other ethnic groups, and parent's education was dichotomised into <11 years and >11 years of education. Data was also obtained from schools on participants' school year (7-11), attendance rate (%) and their pupil premium status (yes/no). In the UK, pupil premium is extra funding that schools received for disadvantaged pupils (including pupils who have been, in the past six years, eligible for free school meals). Pupil premium status was obtained as an indicator of deprivation and/or financial assistance.

Self-reported bullying involvement

Self-reported bullying involvement was assessed using the Bullying and Friendship Interview schedule (Wolke et al., 2000) (Appendix E). Pupils were provided with behavioural descriptions of bullying/victimisation (table 6.4). The first 13 items assessed participant's experience of different types of victimisation; direct (e.g., "been hit or beaten up"), relational (e.g. "had lies/nasty things said about you"), and cyber (e.g. "had rumours spread about you online"), and pupils were asked how frequently each behaviour had happened to them in the last six months. For each item, participants could respond with "never", "sometimes", "quite a lot" (several times a month) or "a lot" (at least once a week). These 13 items were then adapted slightly to assess bullying perpetration (e.g., "made others do things they didn't want to"). To remain consistent with the definition of bullying as a repeated act, only responses of "quite a lot" or "a lot" were considered indications of bullying perpetration/victimisation (Wolke, Woods, Bloomfield, & Karstadt, 2001a; Woods & Wolke, 2004). Good reliability was found for the victimisation (α=.84) and bullying (α=.86) items.

Table 6.4 Items used in the Bullying and Friendship Schedule

Item	Type of Bullying
1. Belongings taken	Direct
2. Threatened/blackmailed	Direct
3. Hit/beaten up	Direct
4. Tricked in a nasty way	Direct
5. Called bad/nasty names	Direct
6. Others not wanting to play with them to upset them	Relational
7. Made to do things they didn't want to	Relational
8. Lies/nasty things said about them	Relational
9. Games spoilt	Relational
10. Private emails, messages or photos forwarded to someone else or where others can see it	Cyber
11. Rumours spread online	Cyber
12. Threatening or aggressive emails, instant messages, text messages or tweets	Cyber
13. Embarrassing pictures posted online without permission	Cyber

Peer-nominated bullying involvement

For peer-nominated bullying involvement, participants were given a list of the names of the pupils in their tutor/form group, with a number written beside each name. Participants could nominate up to three of these students, and not themselves, who

were either the victims or the perpetrators of the bullying behaviours described (Appendix H). These descriptions corresponded to those used for the self-report measure of direct and relational bullying (e.g. “Some people repeatedly leave people out of get-togethers, parties, trips or groups, get others to ignore people, or spread nasty lies, rumours or stories about people on purpose. Which people in your form/tutor do this?”). Participants made their nominations by selecting the numbered box on screen which corresponded to the name on their written list. This method helped to reduce the risk of other participants seeing the names being nominated. Pupils were identified as involved in bullying if their z-score (using the number of nominations received and their tutor group size) was >1SD above the mean of their tutor group for bullying (bullies), victimisation (victims) or both (bully-victims). All other participants were identified as uninvolved.

Strengths and difficulties

Behavioural and emotional difficulties were assessed with the Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997). The SDQ is a widely used self-report and parent-report measure (Appendix F), predominantly used to screen for psychiatric problems in young people (Goodman, Ford, Simmons, Gatward, & Meltzer, 2003). The scale consists of 25 items which are divided into five subscales; hyperactivity (e.g. “I am constantly fidgeting or squirming”), emotional symptoms (e.g. “I am often unhappy”), peer problems (e.g. “I get on better with adults than people my age”), conduct problems (e.g. “I take things that are not mine”), and prosocial behaviour (e.g. “I usually share with others”), for which participants rate on a 3-point scale how accurate each statement is (0 = *not true*, 2 = *certainly true*). Items are summed to create a score for each subscale (range; 0-10), where a higher score on the prosocial subscale indicates more prosocial behaviour (thus strengths), and higher scores on the remaining four subscales reflect more difficulties. A total difficulties score (range; 0-40) can then be generated from the sum of these subscales (excluding the prosocial subscale); with more overall difficulties being indicated by higher scores. Muris, Meesters, and van den Berg (2003) reported an alpha of .78 for total difficulties from their sample of children and adolescents.

Two items were removed from the total difficulties score as they reflected behaviours associated with bullying and victimisation; i.e., “I fight a lot. I can make other people do what I want” (conduct problems) and “other children or young people pick on or bully me” (peer problems). Cronbach alpha in the current sample was α=.82 for total difficulties, and α=.70 for the pro-social subscale.

Self-esteem

Self-esteem was assessed with the Rosenberg (1965) Self-Esteem (SE) Scale (Appendix G). This self-report measure is widely used and well-validated measure of global self-worth. The scale consists of ten statements (e.g. “On the whole I am satisfied with myself”), for which participants are asked to rate how strongly they agree with each statement. Each response is given on a 4-point scale (0 = strongly disagree; 3 = strongly agree), and these are then summed to create a total self-esteem score. Total scores therefore range from 0-30, with higher scores indicating higher self-esteem. Alpha coefficients of .74 to .77 for this scale have been previously reported for adolescents (McCarthy & Hoge, 1982). For the current sample of adolescents, Cronbach alpha was high (α=.89).

Perceived Popularity and Social Acceptance

Perceived popularity and social acceptance was assessed via a peer-nomination measure (Appendix H). For perceived popularity, participants were asked to nominate up to three members of their tutor/form group they believed were the most popular and those thought to be least popular. For acceptance, participants were asked to select up to three members of their tutor/form group who they “most wanted to hang around with” (liked most) and also “least wanted to hang around with” (liked least). The same list of names was used as for the bullying involvement items and, to avoid forced nominations, participants could select a response of “nobody”, “I don’t know”, or “I don’t want to answer” for each question.

From these items, three different constructs of sociometric status were measured based upon methods previously used (de Bruyn et al., 2010; Garandeau et al., 2014b).

First, standardised scores (z-scores) were created by totalling the number of nominations for each item and standardising these scores within tutor groups. A continuous score for *social impact* was then generated by summing the 'most and least accepted z-scores (social impact = most accepted z-score + least accepted z-score), whereas a *social acceptance* score was calculated by subtracting the 'least accepted' from the 'most accepted' z-score (social acceptance = most accepted z-score – least accepted z-score). The same procedure was used for *perceived popularity*, whereby the 'least popular' was subtracted from the 'most popular' z-score to produce a continuous perceived popularity score (perceived popularity = most popular z-score – least popular z-score).

6.2.4. Stage 1: Procedure

Once a school confirmed their participation, all pupils aged 11-16 years received a consent form and an information sheet (Appendix B) containing an overview of the study; including the purpose of the research, where the data would be used and details regarding anonymity, confidentiality and their right to withdraw participation. Parents also received an information sheet (Appendix C) and an opt-out form to return by a specified date (approximately two weeks from receipt) to refuse their child's involvement. Only pupils with signed consent and passive parental consent could be included in the study. The schedules for testing and the allocation of pupils within each session were organised and co-ordinated with each school.

Pupils completed the online survey in class-sized groups (20-30 pupils) during one lesson (50-60 minutes). At the start of each session the researcher gave standardised verbal instructions for completing the survey and reminded participants that the information they give would remain confidential. The electronic questionnaire was accessible through individual passwords which were handed out to pupils at the start of the testing session and then collected back by the researcher. Demographic questions always appeared first, and the remaining measures were counterbalanced. Once the survey was completed, participants were directed to an online game for the remainder

of the session to minimise disruption to others. The surveys could only be completed when at least one researcher and member of the school's teaching staff were present.

6.2.5. Pupil Selection for Stage 2

Missing data for the self-reported bullying and victimisation scales were identified, and those with incomplete data on these measures were excluded from the analysis.

Pupils were categorised into the four bullying groups (bullies, victims, bully-victims, and uninvolved) via the selection rules described in table 6.5 below. Due to the low reporting of self-reported bullying perpetration (*n*=60, 2.2%), both the self-reported and peer-nominated data were used to identify and select bullies and bully-victims. Only self-reports were used to select victims as peers more often nominate victims based on victim reputation than current victim status (Boulton, 2013).

From these selection rules, a large number of victims, bully-victims, and uninvolved adolescents were identified. A subsample of these groups was therefore selected using Microsoft Excel's number generator. All pupils identified as a bully were selected to participate in stage two. In total, 1088 pupils were selected

Table 6.5 Rules used to select youths for stage two assessments

Role	Rule	**Selected *n***
Bully	Self-reported bully OR peer-nominated bully, AND not a self-reported or peer-nominated victim	226
Bully-victim	Both a bully and a victim in the self- or peer-report measure, OR any combination of bully and victim across these measures	349
Victim	Self-reported victim (several times a month or more), AND not a self-reported or peer-nominated bully	263
Uninvolved	Not a self-reported victim or bully, AND no peer nominations as a victim or bully	250

6.3. Stage 2: Assessment

6.3.1. Sample

Of the 1088 pupils selected for stage two, there was a total of 334 (31%) dropouts and exclusions (bullies; 23.7%, victims; 27.2%, bully-victims; 24.0%; uninvolved; 25.1%). As shown in figure 6.4, the main reasons for non-participation were absence from school (n=134) and organisational difficulties within the schools (n=126), and exclusions were predominantly due to missing data (n=39). Therefore, the final sample comprised 754 pupils (bullies=147, victims=172, bully-victims=269, uninvolved=166), of which 53.6% were female. The majority of participants were white British (85.2%) and the mean age of the sample was 13.95 years (*SD*=1.34) (table 6.6).

Although 754 pupils participated in the stage two assessments, the proceeding studies will slightly vary in sample size due to incomplete or missing data across measures.

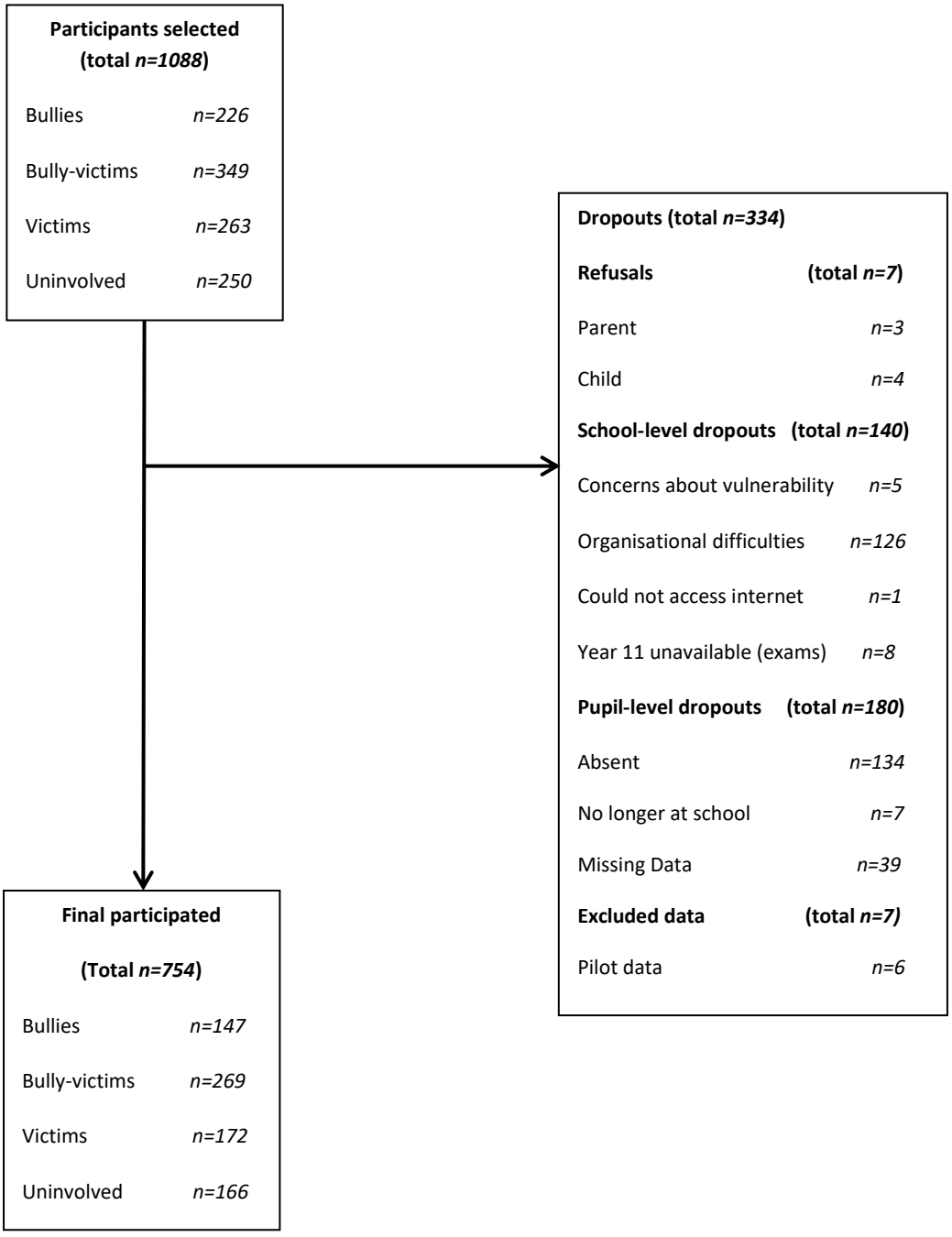

Figure 6.4 STROBE diagram of recruitment and drop-outs for stage two

Table 6.6 Descriptive data for stage two participants, split by bullying group. All numbers are percentages, unless otherwise stated.

			Bully Group			
		Total	**Bully**	**Bully-Victim**	**Victim**	**Uninvolved**
	N (%)	754	147 (19.5)	269 (35.7)	172 (22.8)	166 (22.0)
Sex (%)	*Female*	53.6	19.1	39.1	18.9	22.9
	Male	46.4	19.8	32.7	26.2	21.3
Ethnicity (%)	*White British*	85.2	18.4	36.1	23.3	22.2
	Minority	14.8	26.2	33.3	19.8	20.7
Age (years)	*M*	13.95	14.15	14.04	13.73	13.84
	(SD)	(1.34)	(1.39)	(1.25)	(1.36)	(1.40)
School year (%)	*7*	25.2	16.3	30.5	29.0	24.2
	8	21.0	19.6	32.3	23.4	24.7
	9	22.0	16.2	47.0	18.7	18.1
	10	22.3	23.2	35.1	19.7	22.0
	11	9.5	26.4	31.9	22.2	19.5
Pupil Premium (%)	*No*	77.5	19.2	32.5	23.3	25.0
	Yes	22.5	20.6	46.5	21.2	11.7
Attendance (%)	*M*	95.40	95.21	95.38	94.97	96.01
	(SD)	(4.66)	(4.85)	(4.31)	(5.46)	(4.08)
Parent Education (%)	*≤11 years*	14.1	19.8	36.8	23.6	19.8
	>11 years	85.9	19.4	35.5	22.7	22.4

6.3.2. Stage 2: Measures

Emotion Recognition

Emotion recognition was assessed using the Child's Eyes Test (Eyes-C) (Baron-Cohen, Wheelwright, Spong, Scahill, & Lawson, 2001). This version was adapted from the adult 'Reading the Mind in the Eyes Test' (Baron-Cohen, Jolliffe, Mortimore, & Robertson, 1997), which the authors created to assess emotion recognition within autistic populations (Baron-Cohen et al., 1997; Baron-Cohen, Wheelwright, Hill, Raste, & Plumb, 2001). The Eyes-C consists of 28 photographs showing only the eye regions of men's and women's faces. Children are asked what the person in the photograph is thinking or feeling from a choice of four words, for which only one is deemed correct.

For this study, a sub-selection of eight photographs, plus one initial practice item, was used (Appendix I). The photographs selected varied in the age of the faces shown and represented an equal number of males and females. For each item, photographs appeared on screen for five seconds and then disappeared, followed by another ten seconds for participants to select a response. Participants could not respond whilst the photograph was on the screen, nor were they able to go onto the next item until a response was selected. This helped to ensure that the participant was ready and attending to the screen before the next photograph appeared.

The EYES-C was deemed more appropriate for use within adolescent samples than other measures of emotion recognition, e.g., The Diagnostic Analysis of Nonverbal Accuracy (Nowicki Jr & Duke, 1989); which has been predominantly used with younger children between the ages of 6- and 10- years of age.

Good test-retest reliability has been reported both for the adult version of the Reading the Mind in the Eyes Test' intraclass correlation coefficient (ICC) = .63 ($p<.01$) (Fernández-Abascal, Cabello, Fernández-Berrocal, & Baron-Cohen, 2013), and the child version: Bland Altman = $\pm$ 4.3 (Hallerbäck, Lugnegård, Hjärthag, & Gillberg, 2009).

Hostile attribution bias

For this study, a new measure was constructed in which pupils were shown photographs of social situations. For each photograph, the situation and/or behaviour shown was ambiguous, and could be interpreted as either harmless or hostile. An initial 13 items photographs were created involving adolescents from a local youth theatre group. The photographs were inspired by existing images found within the media, but were also created to reflect a range of interpersonal contexts and types of potential bullying. These 13 items were piloted with adolescents (n=27, M_{age}=15.56 years, female=70.4%) who were members of an educational social network for young people online (i.e., IGGY; www.iggy.net). Based on the data from this online study, a final set of eight items for this measure were chosen (See Appendix J). These items were those that had the largest variation in responses, thus supporting the ambiguous content of the photographs; but also those that depicted different types of bullying (i.e. physical, relational, cyber or sibling) and varied in gender of perpetrator(s)/victims(s). In this pilot study, Cronbach's alpha for the ambiguous photographs was .69.

For each item, participants were shown the photograph and a list of four statements, from which they were asked to select the one that best described what was happening in the picture. Across the four statements, the harmful intent attributed to the 'perpetrator(s)' increased, and responses ranged from the most innocent (0); e.g. 'The two boys are telling jokes and laughing', to the most hostile (3); e.g. 'The boys are telling a nasty joke about the other boy and laughing about him'. The order of the responses was reversed for half of the items. A hostile attribution score was calculated by summing the number of 'most hostile intent' attributions over the eight items. Thus, scores ranged from 0 to 8, in which higher scores indicated more hostile attribution bias. Cronbach's alpha for the stage two participants was .56.

Causal Attributions: Self-Blame

Hypothetical situations, often in the form of short vignettes, have been widely used to measure attribution biases in children (Camodeca et al., 2003; Crick & Dodge, 1996; Graham & Juvonen, 1998). For this study, five existing vignettes were selected (Crain,

Finch, & Foster, 2005; Crick, 1995), and were adapted to increase their relevance for adolescents in the UK today (Appendix K). Each vignette described a hypothetical situation for which certain responses could reflect a potential bias for self-blame when explaining the actions of others. A sixth vignette was constructed for this study, as described below, representing a situation that most youth today could relate to:

'You have text your friend Jade and did not get a reply, however then you see Jade has written a Facebook status from her phone since receiving your message and therefore must have been on her phone and seen your text'

How would you explain this behaviour?

- It's possible that Jade's phone is not working properly and she may not have received your text (External blame)

- You must have upset Jade in some way because she would never normally ignore you like this (Behavioural self-blame)

- Jade may have seen your text and then been distracted and forgot to reply, your friends do this a lot (External blame)

- Jade always replies to everyone else's texts but never yours. She obviously prefers her other friends to you and therefore treats them better (Characterological self-blame)

These vignettes were piloted on a sample of 140 UK students (M_{age}=19.76, males=50.7%) to ensure the ambiguity of the situations described. In regards to attributions of blame, research has distinguished between characterological self-blame, behavioural self-blame and external blame (Georgiou & Stavrinides, 2008; Graham & Juvonen, 1998), and responses were therefore coded into these three attribution styles. The number of characterological self-blame attributions that were made across these items was measured as it represents the most maladaptive attribution style (Graham & Juvonen, 1998). Characterological self-blame was calculated by summing the number of times this type of response was chosen across the six items.

A Cronbach's Alpha of between .51 to .60 has been previously reported for measures of attributional style (Anderson, Jennings, & Arnoult, 1988; Anderson & Riger, 1991). In the current sample of adolescents, low reliability for characterological self-blame was found (Cronbach's α=.48).

Empathy

The Interpersonal Reactivity Index (IRI) (Davis & Association, 1980) is a 28-item self-report measure which has been widely utilised with adolescents (Hawk et al., 2013; Poteat & Espelage, 2005). The original questionnaire consists of four subscales; perspective-taking (PT; considering others' viewpoints) and fantasising (FN; identifying with fictional characters) relate to the cognitive component of empathy, whilst empathic concern (EC; having sympathy for those in need) and personal distress (PD; negative arousal to others' distress) reflect the affective dimension (Hawk et al., 2013). The PT and EC subscales of the IRI have been reported to correspond most strongly to the two constructs of cognitive and affective empathy (Batanova & Loukas, 2011; Davis & Association, 1980; Gini et al., 2007) and therefore only these scales were used for this study.

The final measure consisted of a 14 items (Appendix L); seven PT items (e.g. "I try to look at everybody's side of a disagreement before I make a decision") and seven EC items (e.g. "I often have tender, concerned feelings for people less fortunate than me"), with responses ranging from 0 (not at all) to 4 (extremely). A PT score and EC score was calculated by summing responses for each subscale (ensuring that any reverse-scored items were recoded), for which higher scores indicated higher levels of cognitive and affective empathy, respectively. Finally, a total empathy score was created from combining these two scores.

Cronbach's Alpha for total empathy was .79. The reliability for the PT scale were α =.70 and the EC subscale was α =.67.

Callous-Unemotional (CU) Traits

The Inventory of Callous–Unemotional Traits (ICU; Frick, 2003) has been widely used in previous studies relating to aggression or conduct problems (Frick et al., 2003a; Kimonis et al., 2014; Viding et al., 2009), and with adolescent populations (Ciucci & Baroncelli, 2014; Fanti et al., 2009; Fanti & Kimonis, 2012). The ICU is a 24-item self-report questionnaire (Appendix M) that addresses three factors associated with CU-Traits; being callous, uncaring and unemotional. The ICU therefore consists of three subscales; callousness (e.g., "I do not care who I hurt to get what I want"), uncaring (e.g., "I feel bad or guilty when I do something wrong"; reverse-scored) and unemotional (e.g. "I do not show my emotions to others") traits. For all items, participants responded by selecting how much they agreed with each statement; with responses ranging from 0 (not at all true) to 3 (definitely true). A total score was created for each subscale by summing the responses for the relevant items (ensuring all reverse-scored items were recoded), with higher scores indicating increased levels of callous, uncaring and unemotional traits. Similar to previous studies (Muñoz et al., 2011) Cronbach's alpha for the subscales were; .75 for callous, .86 for uncaring, and .50 for unemotional traits. A total score for overall CU-traits was therefore calculated by summing the scores from the individual subscales, and overall good reliability was found for the total scale (α =.79).

Affective Instability

Affective instability (AI) has most commonly been considered as a common precursor to borderline personality disorder, depression and other clinical disorders, and has focussed on measuring fluctuations in mood (Rost et al., 2016; Santangelo et al., 2014; Stange et al., 2016). As discussed in chapter four, both victimisation and bullying perpetration have been associated with difficulties in regulating highly fluctuating emotions, and thus affective instability may show important associations with involvement in bullying (Farmer & Kashdan, 2014; Frizzo et al., 2013; Mahady Wilton et al., 2000). Based on a recent systematic review, three core components of AI have been proposed; the oscillation, the intensity and the control of affect (Marwaha et al., 2014). A new scale was therefore created for this study (Appendix N) by combining pre-existing scales that represent these three core components of AI (Marwaha et al.,

2014). Six items from the Affective Lability Scale (ALS) (Harvey, Greenberg, & Serper, 1989) were selected to measure the oscillation/fluctuation of affect (e.g. “One minute I can be feeling ok and then the next minute I’m tense, jittery and nervous”). For Intensity, six items from the Affective Intensity Measure (AIM) (Larsen, 1984) were used (e.g. “When I’m happy, I feel like I’m bursting with joy”) and six items from the Affective Control Scale (ACS) (Williams, Chambless, & Ahrens, 1997) were selected (e.g., “When I am nervous I am afraid I will act stupid”).

The items selected from each scale were those that corresponded most clearly to the definition of AI and guided by factor loadings that have been reported previously (Harvey et al., 1989; Larsen, 1984; Williams et al., 1997). Participants were asked to indicate how much they agreed with each statement, and responses for all items were given on a 5-point scale, ranging from strongly disagree (0) to strongly agree (4). A total score for each subscale was generated by summing responses, where higher scores represented more frequent fluctuations in mood (ALS), a greater intensity of affect (AIM) and less control of affect (ACS). Cronbach’s alpha for the three subscales were; ALS=.87, AIM=.38, and ACS=.75. The focus however was to assess affective instability as a holistic trait that incorporated all these factors and therefore a total AI score was calculated from sum of the three subscales, with higher scores suggesting higher levels of affective instability. The reliability of the combined affective instability scale in the current sample was α=.84.

6.3.3. Administration of the Stage 2 Survey

Schools were informed of the pupils required and organised the scheduling of the testing sessions with the researcher. At the start of each session, a brief written overview was provided to remind participants about the study and re-iterated information regarding confidentiality and anonymity (Appendix D). Pupils accessed the survey using their 6-digit ID number that was previously assigned, and sessions were completed in silence under the supervision of a researcher and teacher. Once data collection had been completed for stage 2, schools received a feedback report containing general findings and a written debrief to provide to pupils regarding the nature of the study and contact details of relevant bullying- or child- help organisations.

6.4. Analyses

Analysis of covariance (ANCOVA) was used across all three studies to investigate the main effect of bullying role for each outcome variable, whilst controlling for potential confounding variables. Significant main effects were then explored using Bonferroni post-hoc comparisons to identify differences between the roles. In addition, study one included multiple regression analyses to investigate the contribution of the bullying roles in predicting each aspect of sociometric status, compared to other individual characteristics. Based on an editorial recommendation following the submission of study two for publication, a preliminary analysis was conducted involving three-way ANOVAs to investigate the effects of bullying, victimisation, gender, and their interactions on the outcome measures for social information processing. The classification rules and composition of these bullying and victimisation groups are described in chapter eight.

CHAPTER SEVEN - Comparisons between adolescent bullies, victims, and bully-victims on perceived popularity, social impact, and acceptance

This study investigated the effect of bullying role, i.e., bully, victim, and bully-victim, on three measures of sociometric status; perceived popularity, social acceptance, and social impact. 2,721 adolescents aged 11 to 16 years from 5 secondary schools completed an online survey that assessed bullying involvement (self- and peer-reported), self-esteem, and behavioural difficulties. Poor agreement between self- and peer reported bullying roles (victim, bully-victims, bullies, and uninvolved were found) with many bullies self-identifying as victims. Self- and peer-reported roles were subsequently combined. Compared to uninvolved adolescents, all bullying roles had greater social impact. Bullies scored higher than all other roles for perceived popularity, whereas victims and bully-victims were the lowest in social acceptance. Involvement in bullying in any role made the most contribution to predicting all measures of sociometric status over and above individual characteristics, behavioural difficulties and self-esteem. Overall, the perceived popularity found for bullies suggests that these adolescents are socially rewarded by peers for their victimisation of others. Interventions may need to address the whole peer system in raising the social status of those who are victimised, whilst reducing the rewards received by bullies for their anti-social behaviour.

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Re-submission under review: Social Development

7.1. Introduction

School bullying is a highly pervasive issue for children and adolescents world-wide, and has been described by some as a public health concern (Srabstein & Leventhal, 2010). Despite extensive efforts to identify the motivations behind bullying and ways to tackle it, interventions have been mixed in their success (Garandeau et al., 2014a). Resource control theories propose that some aggression can be functional and lead to potentially adaptive outcomes (Hawley, 2003; Hawley, Little, & Card, 2007), and for some adolescents, bullying may be an effective form of aggression that is used to gain or maintain social dominance (Caravita & Cillessen, 2012; de Bruyn et al., 2010; Olthof & Goossens, 2008). However other adolescents who bully are reported to be socially marginalized and rejected by their peers (Cook et al., 2010; Rodkin et al., 2015). This has led to the identification of two subgroups of perpetrators: bullies (sometimes called ring leader or strategic bullies) and bully-victims (i.e. those who bully others but are also victimised). Bully-victims are described as highly reactive (fly off the handle easily), and are often the assistants for the strategic bullies (Salmivalli, 1999, 2010). It has been reported that bullies show no differences or are even superior in their social information processing compared to those not involved in bullying (Guy, Lee, & Wolke, 2017; Sutton et al., 1999a; Sutton et al., 1999b); while bully-victims have been found to show biases for hostile attributions, self-blame and have a poorer theory of mind (Guy et al., 2017; Shakoor et al., 2012; Toblin et al., 2005). However both groups are reported to be callous and unemotional in pursuit of their aggression (Fanti et al., 2009; Zych et al., 2017).

The sociometric profiles of bullies and the bully-victims have rarely been compared. Additionally, how these two perpetration groups sociometrically differ to purely victimised or uninvolved adolescents may highlight potential social motivations behind bullying behaviour. If bullies are successful in gaining social dominance, and thus benefiting from victimising others, then it may be difficult for interventions to change the behaviour of these adolescents (Garandeau et al., 2014a; Sijtsema, Veenstra, Lindenberg, & Salmivalli, 2009; Vaillancourt et al., 2003).

Measures of sociometric status

Sociometric status is a measure of an individual's social standing, and can be represented by two similar yet distinct constructs; social acceptance and perceived popularity (LaFontana & Cillessen, 1999). Social acceptance (also referred to as social preference) represents how accepted or 'liked' a person is within their peer group (Cillessen & Rose, 2005; Garandeau et al., 2014a). It is typically measured by asking participants to nominate peers whom they most and least like, or most and least want to hang around with (Bukowski & Sippola, 2001). Nominations are often standardised (within schools or classrooms), and a social acceptance score is calculated by subtracting the 'least liked' from the 'most liked' nominations (Coie & Kupersmidt, 1983). Perceived popularity describes the social prestige and dominance an individual has within the peer group. It is most commonly measured from peer-nominations of who are the most popular and least popular members of the classroom. An individual's level of perceived popularity is then derived by subtracting the number of 'least popular' from the 'most popular' nominations (de Bruyn et al., 2010; Prinstein & Cillessen, 2003). Although these two aspects of sociometric status are often moderately correlated (LaFontana & Cillessen, 2002), they are distinctive constructs; those who are popular are not always accepted by peers. Social acceptance is commonly associated with positive social actions, such as cooperativeness (Newcomb, Bukowski, & Pattee, 1993), whereas perceived popularity may be influenced by characteristics such as attractiveness, athleticism, or having desirable possessions (Reijntjes et al., 2013b; Vaillancourt & Hymel, 2006).

Social impact is a third aspect of sociometric status that refers to the prominence or visibility of an individual within the peer group (Garandeau et al., 2014b). The 'liked most' and 'liked least' standardised nominations (as used for social acceptance) are this time summed to create a social impact score (Coie, Dodge, & Coppotelli, 1982; Coie & Kupersmidt, 1983). This score has previously been used to identify children and adolescents with 'neglected' social status (Coie et al., 1982; Coie & Kupersmidt, 1983), or to determine status hierarchies in classrooms (Garandeau et al., 2014b; Schäfer et al., 2005). Social impact is thus a measure of how visible or known a student is within the social group (e.g. classroom). Individuals with high social impact may have a high social presence; however their overall sociometric profiles can either be positive or negative.

Sociometric status and involvement in bullying

Aggression has also been found to have associations with popularity, whereby aggressive youth are often reported to be popular, despite being largely disliked by others (Cillessen & Mayeux, 2004; Cillessen & Rose, 2005; Garandeau et al., 2011). Similarly, bullies have been found to be highly popular, but typically have less social acceptance than their uninvolved peers (Caravita et al., 2009; Prinstein & Cillessen, 2003; Vaillancourt et al., 2003). However, low social acceptance has not always been found for adolescent bullies (Reijntjes et al., 2013b), and this has led to reports that many bullies have controversial status within the peer group; i.e., they are liked by some and disliked by others (Sentse et al., 2013; Sentse et al., 2007; Warden & Mackinnon, 2003).

Victims on the other hand have been reported to be low in both popularity and social acceptance (Caravita et al., 2009; de Bruyn et al., 2010), and may therefore be easy targets for bullies (Garandeau & Cillessen, 2006). Similarly peers may avoid being affiliated with victims through fear of jeopardising their own status or also being targeted by bullies (de Bruyn & Cillessen, 2006; Sentse et al., 2013). Few studies have drawn direct comparisons between bullies and victims, and little is known about how bully-victims compare to bullies and victims. Bully-victims are associated with the worst behavioural and psychological outcomes, and are often ostracised by peers (Cook et al., 2010; Copeland et al., 2013; Özdemir & Stattin, 2011; Schwartz, 2000; Veenstra et al., 2005). This group are likely to be the coercive and reactive aggressors described by resource control theories (Hawley, 2002, 2003), and their bullying of others is ineffective in achieving the same rewards as the ‘pure’ bullies. Despite their distinct behavioural and psychological profiles, bully-victims are often not assessed independently from bullies and victims (Olthof et al., 2011; Postigo et al., 2012), and their dual role as a bully and a victim may have a unique influence on sociometric status.

Bullies, victims, and bully-victims possess distinct attributes that could be either valued or considered undesirable by peers. Bullies are reported to be confident, have high self-esteem, and are often perceived as ‘cool’ (Cillessen & Mayeux, 2004; Rodkin & Roisman, 2010), while victims often lack self-esteem (Özdemir & Stattin, 2011; Wolke et al., 2017) and, like bully-victims, are reported to be emotionally unstable and reactive

(Haynie et al., 2001; O'Brennan et al., 2009; Unnever, 2005). It is unclear however if individual characteristics, or bullying role specifically, has the most influence in determining sociometric status.

Self-reported vs peer-nominated bullying involvement

The two main methods employed to measure bullying involvement are self-reports and peer-nominations (Solberg, Olweus, & Endresen, 2007; Yang, Li, & Salmivalli, 2016). These methods typically produce different prevalence estimates of bullying and victimisation, and specifically how many are identified as bullies, victims, or bully-victims. There is a risk of bias within self-reports, whereby individuals may be reluctant to admit to bullying others, or have biased perceptions of themselves and their peer experiences. Although peer-nominations are useful for reducing the risk of subjective errors, they ultimately rely on how much of the bullying or victimisation is visible to the peer group (Card & Hodges, 2008). Self-report measures commonly result in an under-reporting of bullying perpetration; approximately 1-5% (Copeland et al., 2013; Wolke et al., 2001b), whereas peer-reports often yield higher rates of 13-14% (Boulton & Smith, 1994; Pellegrini et al., 2011; Veenstra et al., 2005). In countries with established behavioural and anti-bullying policies, such as in England, low rates of self-identification as a bully are found (Tippett et al., 2013; Wolke et al., 2014). Therefore a combination of self- and peer-reports may be necessary for investigating differences between the groups involved in bullying, whilst retaining sufficient statistical power.

The Current Study

The primary aim of this study was to investigate differences between adolescent bullies, victims, bully victims, and those not involved on three measures of sociometric status: perceived popularity, social acceptance, and social impact. Secondly, the association of bullying role on these sociometric measures, in comparison with other individual (e.g. emotional and behaviour problems, self-esteem) and demographic factors (e.g. ethnicity, parent education) was assessed. In line with previous findings, despite much of this literature pertaining to younger children (Sentse et al., 2015a), we predicted that adolescent bullies would be highest in perceived popularity but lower in

social acceptance than victims and those not involved. Victims were hypothesised to be lower in perceived popularity than bullies and to have comparable levels of social acceptance to uninvolved adolescents. It is not clear how bully-victims would compare to other roles in perceived popularity and social impact, yet they were expected to be lower in social acceptance than those not involved in bullying. Finally, all those involved in bullying were expected to have higher social impact than uninvolved adolescents, although it is unclear whether social impact would vary between bullies, victims, and bully-victims. Finally, we investigated whether findings would be substantially influenced by whether bullying roles were determined using self-reports, peer-nominations, or a combination of these methods.

7.2. Method

7.2.1. Design and Sample

The two-phased BASE Study (Bullying, Appearance, Social Information Processing and Emotion Study) (Lee, Guy, Dale, & Wolke, 2017b; Wolke et al., 2017) assessed a range of physical, social, and emotional attributes in relation to bullying involvement in adolescence. The data presented here was obtained from stage 1 of this study, in which pupils (*N*=3,883) aged 11-16 years from UK secondary schools were screened for bullying involvement using self-report and peer-nomination measures. Participants also undertook a battery of measures, including the Strengths and Difficulties Questionnaire (SDQ), Self-esteem (SE) scale, and peer-nominations of sociometric status.

Five schools were recruited onto the study and were mostly mixed-faith, mixed-gender (except for one girls' grammar school), and represented different social-economic backgrounds. The number of participants obtained from each school varied from 422 to 694 pupils. Following dropouts, exclusions, and missing data, the final sample comprised 2,754 pupils with complete data for the bullying/victimisation items (female; 56.8%, White British; 82.6%, age in years; *M*=13.51, *SD*=1.35).

All participants gave their informed consent and full ethical approval for the study was obtained from the university's ethics committee.

7.2.2. Procedure

Secondary schools within Central England, UK, were contacted and sent written details about the study. Once a school's involvement was confirmed, pupils (aged 11-16 years) and their parents received information sheets and consent forms. Informed consent was obtained from all participants, along with passive consent from parents via an 'opt-out' procedure. Pupils could only participate if they had provided signed consent, and their parents had not returned a refusal form for their child's participation. The online assessment was completed in groups of 20-30 pupils (approximately 50-60 minutes) during the school day. At the start of each session, pupils were provided with a written overview about the study, and were given standardised instructions for completing the assessment. The survey was accessed via individual passwords, and could only be completed when at least one researcher and a teacher were present. Pupils were required to remain silent during the session, and once the survey was completed, they were directed to an online game until all participants had finished.

7.2.3. Measures

Bullying involvement. For self-reported bullying/victimisation, the Bullying and Friendship Interview schedule (Wolke et al., 2000) was used. First, pupils were given 13 behavioural descriptions of victimisation (Wolke et al., 2017); five items related to direct victimisation (e.g., "been called nasty names"), four items to relational victimisation (e.g., "been made to do things you didn't want to do"), and four items related to cyber-victimisation (e.g., "had rumours spread about you online"). Pupils were asked how often they had experienced each behaviour in the last six months; never, sometimes, quite a lot (several times a month), or a lot (at least once a week). The same items were adapted to assess bullying perpetration. Self-reported victims were pupils who responded with "quite a lot" or "a lot" to any of the 13 victimisation

items; self-reported bullies were pupils who responded with “quite a lot” or “a lot” to any one of 13 bullying items; and bully-victims were those pupils who had been identified as both a self-reported victim and bully (Wolke et al., 2001a; Woods & Wolke, 2004). Good reliability was found for the victimisation (α=.84) and bullying (α=.86) items.

For peer-nominated bullying involvement, pupils were given a numbered list of names of students in their tutor/form group (broadly equivalent to the ‘homeroom’ in US schools). Participants were asked to nominate up to three students (by selecting their corresponding number on screen) who were either victims or perpetrators of the bullying behaviours described (Juvonen et al., 2003; Toblin et al., 2005). These descriptions were equivalent to those used for the self-reports (e.g., for relational bullying; “Some people repeatedly leave people out of get-togethers, parties, trips or groups, get others to ignore people, or spread nasty lies, rumours or stories about people on purpose. Which people in your form/tutor do this?”). To account for the variable number of ‘nominating’ participants in each tutor group, the victimised and bullying nominations were standardised within tutor groups to create a ‘bullying’ and ‘victimisation’ z-score for each participant. Pupils were identified as a peer-nominated bully if their z-score was more than one standard deviation (>1SD) above their tutor-group’s mean for bullying, and peer-nominated victims were those with z-scores >1SD above their tutor-group’s mean for victimisation. Finally, pupils with z-scores >1SD above both the victimisation and bullying items were classified as peer-nominated bully-victims. This study limited nominations to three pupils to encourage participants to consider who best fits the descriptions, rather than simply nominating most classmates (de Bruyn et al., 2010; Juvonen et al., 2003; Schwartz, 2000).

Sociometric status. Social impact, social acceptance, and perceived popularity were assessed using a standard peer-nomination procedure (Coie et al., 1982; Coie & Kupersmidt, 1983; de Bruyn et al., 2010; Schäfer, Korn, Brodbeck, Wolke, & Schulz, 2004a). For social impact and social acceptance, pupils were asked to nominate up to three members of their tutor group who they most and least wanted to hang around with. Participants could not nominate themselves, and could respond with “Nobody”, “I don’t know”, or “I don’t want to answer”. Peer-nominations were totalled and standardised within tutor groups to create separate z-scores for the ‘most liked’ and ‘least liked’ nominations. Social impact was calculated by summing the most and least

liked z-scores, and a social acceptance score was obtained by subtracting the least liked z-score from the most liked z-score (Schäfer et al., 2004a).

Similarly, for perceived popularity, participants were asked to nominate up to three classmates who were the 'most popular' and 'least popular'. Perceived popularity was then calculated by subtracting the most popular z-score by the least popular z-score (de Bruyn et al., 2010).

Behavioural and emotional difficulties. The Strengths and Difficulties Questionnaire (SDQ) (Goodman, 1997) has been widely used to assess behavioural and emotional difficulties, and prosocial behaviour in 11-17 year-olds (Goodman et al., 2003). This self-report measure consists of 25 items grouped into five subscales: hyperactivity, emotional symptoms, peer problems, conduct problems, and prosocial behaviour.

Participants responded on a 3-point scale; from 0 = not true to 2 = certainly true, to indicate how much they agreed with each statement. A score for each subscale was calculated by summing responses from the corresponding items. Higher scores indicate more difficulties, except for the prosocial subscale in which higher scores reflect more prosocial behaviour.

The peer problems subscale addresses aspects of peer victimisation, popularity, and likeability, and was therefore not included in the analyses. Additionally, one item was removed from the conduct problems subscale as it described behaviours associated with bullying; i.e., "I fight a lot. I can make other people do what I want". Cronbach's alphas were; emotional problems=.75, conduct problems=.59, hyperactivity=.73, and prosocial behaviour=.70.

Self-esteem. Participants completed Rosenberg's Self-Esteem (SE) Scale (Rosenberg, 1965), which includes ten self-report items responded to on a 4-point scale; from 0 = "disagree a lot" to 3 = "agree a lot". Responses were summed across all items with higher scores indicating higher self-esteem. Cronbach alpha for the current sample was α=.89.

Individual characteristics. Pupils reported their gender, ethnicity, date of birth, and their parent's highest level of education (i.e., 1-11 years; no education to basic

schooling, and >11 years; further education, college or university). Ethnicity was dichotomised into 'White British' and 'Other' due to the low prevalence of individual ethnic groups (e.g., 'Asian' was the next largest group at 6.1%). Schools provided data regarding participants' attendance (%) and pupil premium status. In the UK, pupil premium refers to extra funding that schools receive for disadvantaged pupils (including pupils who have been eligible for free school meals in the past six years). Pupil premium status for each participant ('yes'/'no') was obtained as an indicator of deprivation and/or financial assistance.

7.2.4. Analysis

Participants with whole scales missing for the self-reported bullying and victimisation measure were excluded from the final sample, along with participants with more than one missing item per scale. Missing data for a single item was replaced with the mean value for that scale (stratified by gender). Missing data was completely at random (MCAR), and bivariate analyses found no significant differences in bullying role or any demographic variable between those with complete or missing data.

Roles were defined by self-report only, peer-nomination only, and combined report. The agreement (Cohen's Kappa) between self- and peer-identified role was computed. The primary analysis was based on the combined reports, but was repeated for self-report only and peer-report only (shown in supplementary tables). Bivariate analyses (Chi-square, one-way ANOVAs) were conducted on the demographic data. Any of these variables that showed significant differences between the bullying roles were included as covariates and controlled for in the analyses.

Analysis of covariance (ANCOVAs) and Bonferroni adjusted post-hoc comparisons were conducted to compare means between the final (combined) roles on scores for social impact, social acceptance, and perceived popularity. To determine the extent to which involvement in bullying predicted sociometric status compared to other individual factors, multiple regressions were conducted separately for social impact, social acceptance, and perceived popularity. In step 1, each sociometric status variable was entered as the outcome and bullying role (i.e., bully, victim, and bully-victim) was entered as the predictor. The uninvolved group were used as the reference category in

all models. In step 2, demographic variables were simultaneously entered as covariates along with the SDQ subscales and self-esteem. These regression models were repeated for the self-reported and peer-nominated roles to compare findings from these different measures of bullying involvement. Due to the prior standardisation of the sociometric scores, the unstandardised *B* values are reported, along with 95% confidence intervals (95% CI). Partial eta squared ($\eta\rho^2$) is reported as a measure of effect size; with values of .0099, .0588, and .1379 as indicators of small, moderate, and large effect sizes, respectively (Cohen, 1977; Richardson, 2011). Statistical significance was set at $p<.05$ and all analyses were computed using SPSS version 22.

7.3. Results

7.3.1. Final Sample

Thirty-three pupils were identified as missing from the tutor group lists or included on the incorrect list. These pupils could therefore not be nominated by other participants and were excluded from the sample. The final sample of participants was 2,721; female=56.9%; White British=82.4%; Age in years; *M*=13.51, *SD*=1.36 (table 7.1).

Table 7.1 Descriptive data for final sample (split by combined role). All numbers are percentages, unless otherwise stated

			Combined Bullying Role			
		Total	Bully	Bully-victim	Victim	Uninvolved
	N	*2721*	*279*	*390*	*649*	*1403*
	(%)		*(10.3)*	*(14.3)*	*(23.9)*	*(51.6)*
Gender	*Female %*	56.9	8.5	11.8	25.0	54.7
	Male %	43.1	9.9	16.4	23.2	50.5
Age (years)	*Mean*	13.51	13.88	13.73	13.36	13.44
	(SD)	1.36	1.38	1.29	1.34	1.36
Ethnicity	*White British %*	82.4	8.8	13.9	24.2	53.1
	Other %	17.6	10.4	13.6	24.0	52.0
Attendance	*Mean*	95.60	13.3	14.6	13.3	11.0
	(SD)	4.64	86.7	85.4	86.7	89.0
Parent Ed	*≤11 years %*	12.3	9.8	17.0	26.0	47.2
	>11 years %	87.7	9.0	13.4	23.9	53.7
PP	*No %*	78.1	8.3	12.2	22.9	56.6
	Yes %	21.9	12.1	19.3	29.0	39.6

NOTE: Parent Ed; parent's education, PP; pupil premium status.

7.3.2. Bullying roles

The bullying roles were determined according to self-report only, peer-nomination only and combined self-report and peer-nominations. Classification rules are shown below.

Bullies:

- Self-reported bully
- Peer-nominated bully
- Combined bully: Either a self-reported bully (and not also a peer-nominated victim) OR peer-nominated bully (and not also a self-reported victim)

Bully-victims:

- Self-reported bully and victim
- Peer-nominated bully and victim
- Combined: either a self-reported bully-victim OR peer-nominated bully-victim, OR either a self-reported victim and a peer-nominated bully OR a self-reported bully and a peer-nominated victim

Victims:

- Self-reported victim
- Peer-nominated victim
- Combined: Either a self-reported victim (and not also a peer-nominated bully) OR peer-nominated victim (and not also a self-reported bully)

Uninvolved:

- Self-report; not a self-reported bully, victim, or bully-victim
- Peer-nominated; Not a peer-nominated bully, victim, or bully-victim
- Combined: Neither a self-reported or peer-nominated bully, victim, or bully-victim

Table 7.2 shows the number of participants classified as bullies, victims, bully-victims, and uninvolved using self-reports only, peer-nominations only, and combined reports. There was a poor overall level of agreement (κ=.102) between self-reported and peer-

nominated roles. This was most evident for the bully group, in which only 60 self-reported bullies were identified, compared to 358 peer-nominated bullies (κ=.030).

Table 7.2 Differences in roles identified by self-report, peer-nominations, and combined reports (including Kappa levels of agreement between self-and peer- reported roles).

	Bully *n* (%)	Bully-victim *n* (%)	Victim *n* (%)	Uninvolved *n* (%)
Self-reported	60 (2.2)	177 (6.5)	591 (21.7)	1893 (69.6)
Peer nominated	358 (13.2)	142 (5.2)	329 (12.1)	1892 (69.5)
Kappa agreement (κ)	κ=.030	κ=.052	κ=.086	κ=.151
Combined role	279 (10.3)	390 (14.3)	649 (23.9)	1403 (51.6)

NOTE: Overall Kappa level of agreement between self-reported and peer-nominated roles was κ=.102

Appendix O (table O1) shows the cross-tabulation of peer-nominations of bullying roles with self-reported bullying roles. Most peer-nominated bullies self-reported that they were victims, and this was also true for peer-nominated bully-victims. The highest agreement (although still low; κ=.086) was found between self- and peer-reported victims.

7.3.3. Differences between bullying roles for sociometric status

Of the demographic variables, gender (χ^2=30.411, p<.001), age (F(3,2717)=14.074, p<.001), attendance (F(3,2263)=8.039, p<.001), and pupil premium status (χ^2=46.486, p<.001) showed significant differences between the bullying roles and were therefore included as covariates in all ANCOVA models.

Adjusted means for the sociometric measures and Bonferroni comparisons are reported for the combined roles in Table 7.3, and shown separately for the self-reported and peer-nominated roles in Appendix P (tables P1 to P3). Figure 7.1 shows the mean differences in z-scores between the self-reported, peer-reported, and combined 'involved' roles (bullies, victims, and bully-victims) and those not involved for social impact, social acceptance, and perceived popularity.

Table 7.3 Adjusted means and comparisons between combined roles (Bonferroni adjusted) for social impact, social acceptance and perceived popularity.

		Social Impact			Social Acceptance			Perceived Popularity		
		M	SE	95% CI	M	SE	95% CI	M	SE	95% CI
Role	Bully	.320 [b]	.082	.159, .481	.089 [a]	.099	-.105, .282	.753 [b]	.101	.555, .951
	Bully-victim	.343 [b]	.066	.213, .472	-.508 [b]	.080	-.664, -.353	-.056 [a]	.081	-.215, .104
	Victim	.043 [c]	.054	-.062, .149	-.244 [b]	.065	-.371, -.116	-.396 [c]	.067	-.526, -.265
	Uninvolved	-.185 [a]	.037	-.257, -.112	.261 [a]	.045	.174, .349	.088 [a]	.046	-.002, .177
Gender	Female	.091	.042	.010, .173	-.152	.050	-.250, -.054	.015	.051	-.085, .115
	Male	.169	.046	.079, .259	-.050	.055	-.158, .059	.180	.057	.069, .291

NOTE: Role means are adjusted for the inclusion of covariates: age (in years), pupil premium status and attendance.
Roles that do not share the same superscript ([a b c]) are significantly different at the $p<.05$ level (E.g. for social impact, the mean scores of victims and bully-victims are significantly different)

Social Impact. Bullying role had a significant main effect on social impact (F(3,2248)=22.172, p<.001, $\eta\rho^2$=.029, *power*=1.000), however there was no significant main effect of gender (F(1,2248)=1.593, p=.207, $\eta\rho^2$=.001), nor a significant interaction between gender and bullying role (F(3,2248)=2.126, p=.095, $\eta\rho^2$=.003). There were no main effects found for any of the covariates included in the model.

Similarly, there were significant main effects of both self-reported role (F(3,2248)=4.755, p=.003, $\eta\rho^2$=.006, *power*=.902), and peer-nominated role (F(3,2248)=34.740, p<.001, $\eta\rho^2$=.044, *power*=1.000) on social impact. Differences were largest between the peer-nominated roles, with bullies and bully-victims having the highest social impact; whereas there were smaller differences according to the self-reported roles; with victims and bully-victims having the highest social impact.

Social Acceptance. A significant main effect of combined role was found for social acceptance (F(3,2248)=29.804, p<.001, $\eta\rho^2$=.038, *power*=1.000). There was no effect of gender (F(1,2248)=1.887, p=.170, $\eta\rho^2$=.001), however there was a significant interaction between bullying role and gender (F(3,2248)=3.921, p=.008, $\eta\rho^2$=.005, *power*=.831). Bonferroni adjusted comparisons revealed gender differences in the bully group only, whereby males had significantly higher social acceptance than females (.389 $\pm$ 1.1.387 vs .-.226 $\pm$ 1.372, p<.046).

Of the covariates included, attendance (F(1,2248)=12.621, p<.001, $\eta\rho^2$=.006, *power*=.944) and age (F(1,2248)=5.558, p=.018, $\eta\rho^2$=.002, *power*=.654) had a significant main effect. Social acceptance increased with higher attendance rates (r(2721)=.095, p<.001) and age (r(2721)=.054, p=.005). There was no significant main effect of pupil premium status.

Similarly, both self-reported role (F(3,2248)=9.340, p<.001, $\eta\rho^2$=.012, *power*=.997) and peer-nominated role (F(3,2248)=61.064, p<.001, $\eta\rho^2$=.075, *power*=1.000) had a significant main effect on social acceptance. Effect sizes were largest for peer-nominated roles and smaller for self-reported roles. However the patterns were identical: bully-victims were the least social accepted followed by victims, and bullies had a moderate social acceptance.

Perceived Popularity. There was a significant main effect of combined role ($F(3,2248)=31.608$ $p<.001$, $\eta\rho^2=.040$, *power*=1.000), and gender ($F(1,2248)=4.678$, $p=.031$, $\eta\rho^2=.002$, *power*=.580); whereby males scored higher for perceived popularity than females (.067 ± 1.618 vs -.033 ± 1.494). A significant interaction was found between gender and bullying role ($F(3,2248)=3.156$, $p=.024$, $\eta\rho^2=.004$, *power*=.735), where gender differences were only found for bullies. In this group, males were significantly higher in perceived popularity than females (.044 ± 1.832 vs -.109 ± 1.913, $p=.035$).

Of the covariates included, only age had a significant main effect ($F(1,2248)=29.040$, $p<.001$, $\eta\rho^2=.013$, *power*=1.000), whereby perceived popularity increased with age ($r(2721)=.174$, $p<.001$). There was no main effect of attendance or pupil premium status.

Finally, there was a significant main effect of both self-reported role ($F(3,2248)=3.079$, $p=.027$, $\eta\rho^2=.004$, *power*=.723) and peer-nominated role ($F(3,2248)=82.171$, $p<.001$, $\eta\rho^2=.099$, *power*=1.000). Consistently, bullies were highest in perceived popularity; whether in the self-reported, peer-nominated or combined analysis. However for the self-reported roles, Bonferroni adjusted comparisons revealed no significant differences.

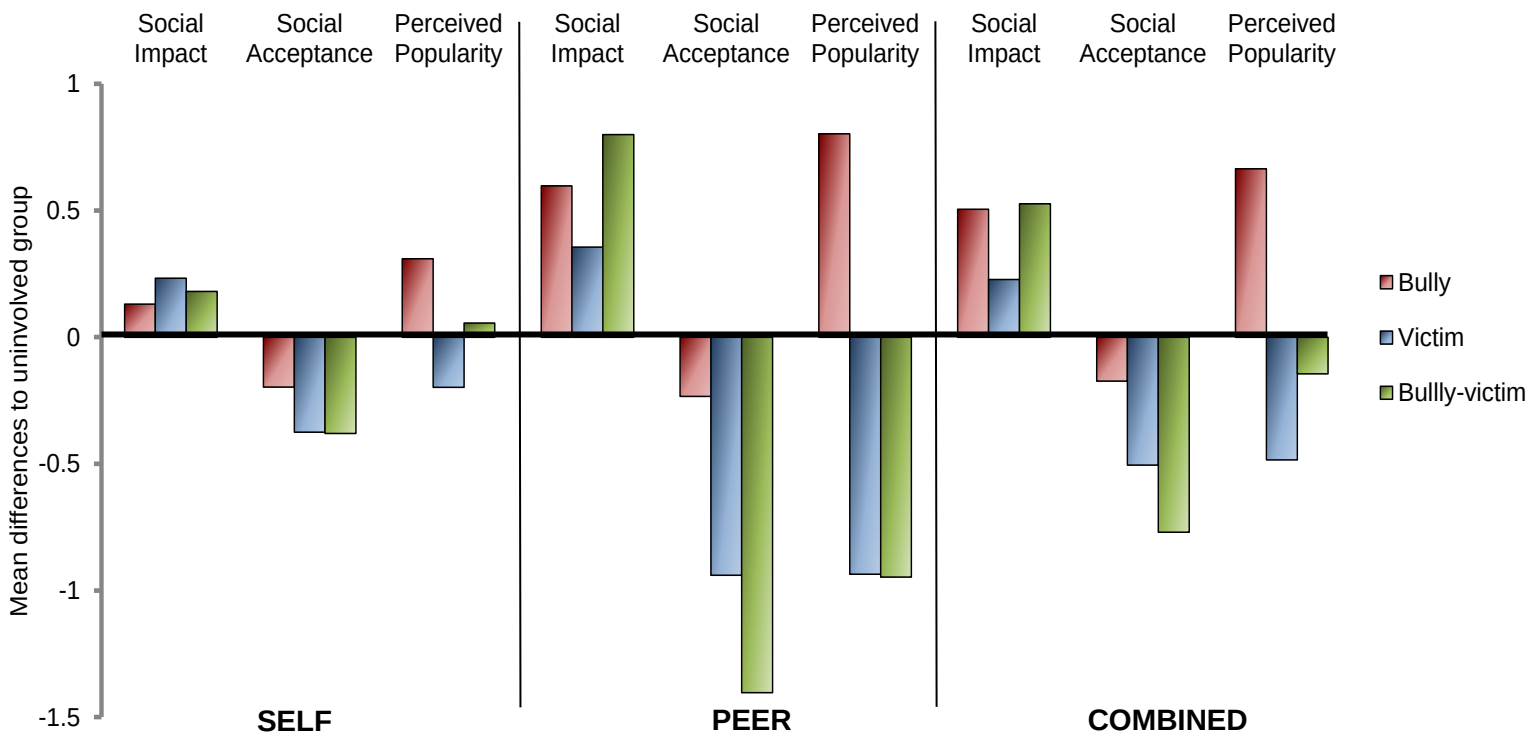

Figure 7.1 Mean differences in social impact, social acceptance, and perceived popularity between bullying roles (bullies, victims, bully-victims) and the uninvolved group (represented at the zero line). Findings for self-reported, peer nominated, and combined bullying roles are displayed.

7.3.4. Individual characteristics and bullying role as predictors of sociometric status

Multiple linear regression analyses were conducted to explore the contribution of each role in predicting social impact, social preference and perceived popularity, and adjusted for the inclusion of demographic and individual characteristics. Regression models were conducted separately using self-reported, peer-nominated, and combined roles (adjusted models for combined roles are shown in table 7.4; full regression models containing covariates are displayed in Appendix P, tables P1 to P3).

All raw and adjusted models were significant with exception of the adjusted model for social impact using self-reported roles (F=1.609, p=.070). After adjusting for the scores from the SDQ subscales, self-esteem, and other individual characteristics, bullying role accounted for the largest amount of variance for nearly all aspects of sociometric status. The one exception to this was the model for perceived popularity using self-reported roles, in which age (B=.160, 95% CI=.112, .209, p<.001) and gender (B=.150, 95% CI=-.289, -.011, p<.001) made the largest contribution in predicting perceived popularity.

Social Impact. In the adjusted model using combined roles, bully-victims accounted for a higher level of social impact (B=.515, 95% CI=-.357, 672, p<.001), followed by bullies (B=.474, 95% CI=-.295, 653, p<.001) and then victims (B=.220, 95% CI=-.089, .352, p=.001). These findings were replicated using the peer-nominated roles; however for the self-reported model, victims accounted for a higher level of social impact (B=.218, 95% CI=-.085, .351, p=.001) (table P1). In all adjusted models, no other variables were significant in predicting social impact.

Social Acceptance. In the adjusted model using combined bullying roles, bully-victims predicted a lower level of social acceptance (B=-.741, 95% CI=-.929, -.553, p<.001), followed by victims (B=-.460, 95% CI=-.617, -.303, p<.001). This pattern was echoed in the models using self-reported and peer-nominated roles (table P2), however when peer-nominated roles were used, bullies also significantly predicted a lower level of social acceptance (B=-.217, 95% CI=-.400, -.034, p=.020). In all models, a higher level of social acceptance was predicted by higher attendance rates and hyperactivity scores, whereas a lower level was predicted by higher self-esteem. Age also accounted

for a higher level of social acceptance in the self-reported and combined models. In the self-reported model only, having pupil premium status significantly predicted a lower level of social acceptance.

Perceived Popularity. In the adjusted model using combined roles, bullies made the largest contribution in predicting a higher level of perceived popularity (*B*=.557, 95% CI=.341, .772, *p*<.001), whereas victims made the largest contribution in predicting a lower level (*B*=-.410, 95% CI=-.569, -.251, *p*<.001). However when using peer-nominated roles, no significant contribution was found for bullies, whereas lower perceived popularity was predicted by bully-victims (*B*=-.905, 95% CI=-1.172, -.638, *p*<.001) and victims (*B*=-.859, 95% CI=-.1.047, -.671, *p*<.001). No self-reported role was significant in predicting perceived popularity (table P3). Across all models, age and higher hyperactivity scores accounted for higher perceived popularity, whereas a lower level was predicted by higher scores for emotional problems and self-esteem. Conduct problems also predicted higher perceived popularity in the self-reported and combined models, and gender (i.e., being female) significantly predicted lower perceived popularity in the self-reported and peer-nominated models.

Table 7.4. Adjusted regression models for social impact, social acceptance, and perceived popularity (using combined, self-reported, and peer-nominated roles)

	Social Impact			Social Acceptance			Perceived Popularity		
	Combined	Self	Peer	Combined	Self	Peer	Combined	Self	Peer
	B [95% CI]	*B* [95% CI]	*B* [95% CI]	*B* [95% CI]	*B* [95% CI]	*B* [95% CI]	*B* [95% CI]	*B* [95% CI]	*B* [95% CI]
Bully	.474***	.106	.569***	-.194	-.227	-.217*	.557***	.066	.726
	[.295, .653]	[-.245, .456]	[.414, .724]	[-.408, .020]	[-.647, .192]	[-.400, -.034]	[.341, .772]	[-.359, .492]	[.543, .909]
Bully-victim	.515***	.157	.780***	-.741***	-.331*	-1.367***	-.185	-.039	-.905***
	[.357, .672]	[-.055, .369]	[.554, 1.006]	[-.929, -.553]	[-.585, -.077]	[-1.634, -1.099]	[-.375, .005]	[-.297, .218]	[-1.172. -.638]
Victim	.220**	.218**	.346***	-.460***	-.325***	-.884***	-.410***	-.124	-.859***
	[.089, .352]	[.085, .351]	[.187, .505]	[-.617, -.303]	[-.485, -.166]	[-1.072, -.696]	[-.569, -.251]	[-.285, .038]	[-1.047, -.671]
R^2	.030	.010	.045	.059	.037	.096	.088	.061	.142
F	4.849***	1.609	7.537***	9.986***	6.098***	16.951***	15.357***	10.330***	26.279***
Power									
Bully	.393	.061	.741	.755	.102	.991	.935	.148	1.000
Victim	.836	.273	.694	.995	.887	.984	1.000	.992	1.000
Bully-victim	.560	.095	.286	.910	.297	.649	.991	.514	.873

7.4. Discussion

The primary aim of this study was to explore the sociometric status of adolescents involved in bullying by making direct comparisons between those involved (i.e., bullies, victims, and bully-victims) and those uninvolved on social impact, social acceptance, and perceived popularity. Few studies have directly compared the sociometric status of bullies and victims, and even fewer have included bully-victims as a separate group. Secondly, the influence that involvement in bullying has on sociometric status, above other individual characteristics, was investigated. Finally, to explore differences in how bullying involvement is assessed, comparisons were made between roles identified from self-reports, peer-nominations, and those derived from a combination of both.

Differences between self-reported and peer-nominated bullying roles

Consistent with previous reports (Obermann, 2011), there was low agreement in bullying roles between self-report and peer-nominations, and only a small number of bullies were identified by self-reports (Solberg & Olweus, 2003; Tippett et al., 2013), compared to those identified by peers. Many peer-nominated bullies and bully-victims reported themselves to be victims. It is possible that callous and unemotional traits that have been associated with bullying (Ciucci & Baroncelli, 2014; Fanti et al., 2009), may detach perpetrators from the suffering and distress experienced by their victims. Similarly, with the increase of anti-bullying policies being implemented within schools, bullies are aware that their behaviour is not tolerated and is at increased risk of punishment; and are therefore less likely to self-identify.

The peer-nominated and combined roles obtained a similar pattern of findings across the sociometric measures; however it was the self-reported roles that deviated the most. Studies using self-reports have reduced statistical power to systematically investigate bullies, even in large samples (Wolke et al., 2014), due to the low self-report rate of bullying perpetration. Similarly, in this study, when roles were based on self-report only, the observed statistical power in the group comparisons was strongly reduced. Furthermore, many bullies reported themselves as victims, and this may dilute the adverse effects of being a victim across the sociometric measures. In contrast, the peer-nominated roles produced the highest observed power across comparisons.

However, there was a greater risk of shared variance in that the bullying roles and the sociometric outcomes were all solely determined by peer-reports (de Bruyn et al., 2010).

The low agreement found between the measures is consistent with reports in other areas such as mental health (Achenbach, Krukowski, Dumenci, & Ivanova, 2005). The agreement between self- and parent reports has also been consistently reported to be low (r=.22) and it has thus been suggested that using multiple informants allows for more accurate assessment of mental health (Ablow et al., 1999; Achenbach et al., 2005). In this study, we took a similar approach of combining self- and peer-report measures, and this reduced the risk of shared variance with the sociometric measures but retained the statistical power of the comparisons. In the following we discuss the findings from the combined roles on sociometric status.

Sociometric status and the combined bullying roles

Bullying role had a significant effect on all aspects of sociometric status. Compared to uninvolved adolescents, all those involved in bullying had higher social impact. Bullies had higher levels of perceived popularity than all other roles, whereas victims had lower perceived popularity than the other groups, and bully-victims were lower in social acceptance than non-victimised adolescents (i.e., bullies and uninvolved). Moreover, involvement in bullying in any role made the largest contribution in predicting all measures of sociometric status, over and above other individual attributes and characteristics. The effects of bullying role were small to moderate across the sociometric outcomes.

These findings support previous claims that bullies have a dominant position within the peer group (Caravita et al., 2009; Vaillancourt et al., 2003). Bullies were perceived as more popular than not only victimised peers, but also uninvolved adolescents, and being a bully was the strongest predictor for higher perceived popularity over and above demographic and individual characteristics. Although it is uncertain if this popularity is a result of bullying others, these findings suggest that bullies incur few social costs from bullying others (Eslea et al., 2004). Bullies had lower social acceptance than those uninvolved, however this difference was not significant, and

being a bully did not significantly predict a lower level of social acceptance. This supports findings that bullies in fact have an average level of social acceptance (Reijntjes et al., 2013b) and a controversial status amongst peers (Salmivalli et al., 1996; Sentse et al., 2013; Warden & Mackinnon, 2003).

With regards to resource control theories of aggression, bullying may be used to access resources or gain social dominance (Monks et al., 2009; Olthof et al., 2011) and, for many bullies, this behaviour may be successful in achieving high social status (Caravita & Cillessen, 2012). Thus the high levels of popularity associated with this group could act as both a motivation and a reward for their behaviour (Olthof et al., 2011; Vaillancourt et al., 2003). It is possible however that this group may possess other characteristics that contribute to their popular status (Vaillancourt & Hymel, 2006); i.e., they may be strong, athletic, or physically attractive. Bullies have also been described as callous, strategic, and manipulative (Ciucci & Baroncelli, 2014; Olthof et al., 2011), and therefore able to adopt more sophisticated and hidden forms of bullying (Leff, Patterson, Kupersmidt, & Power, 1999), or coax peers into believing that the bullying is justified or rational (Garandeau & Cillessen, 2006). These traits and characteristics, along with a reputation for rule-breaking that many peers see as 'cool' (Juvonen et al., 2003; Rodkin et al., 2006; Vaillancourt et al., 2003), may help bullies maintain their dominant status within the peer group (Salmivalli, 2010).

Conversely, victims have been associated with characteristics that may make them vulnerable for victimisation and its persistence over time; i.e., being anxious, sensitive, or lacking confidence (Garandeau & Cillessen, 2006; Salmivalli et al., 1999). Indeed in this study, emotional problems predicted a lower level of perceived popularity and low self-esteem was shown to predict lower social acceptance. Victims were perceived as less popular compared to all other groups, and is not only a likely consequence of being bullied but also a risk factor for victimisation (de Bruyn et al., 2010). Bullies may see unpopular peers as easy targets, and believe their bullying of unpopular targets is less likely to be punished by the peer group (Salmivalli & Isaacs, 2005; Sentse et al., 2015a). Positive peer relationships are reported to provide resilience against victimisation (Boulton, Trueman, Chau, Whitehand, & Amatya, 1999; Fox & Boulton, 2006), and therefore it is not surprising that victims in this study had lower social acceptance than non-victimised peers; i.e., bullies and those uninvolved. Victims may avoid social situations (Slee, 1994), but also peers may be reluctant to be affiliated with

a known victim through fear of jeopardising their own social position or becoming targets themselves (Sentse et al., 2013). Interventions need to tackle the attitudes of the peer group in order to raise the sociometric status of victimised youth, and provide the social support needed to reduce victimisation.

Both bullies and bully-victims had high levels of social impact, however they were different across the other measures of sociometric status. Bully-victims were significantly lower in social acceptance and perceived popularity than bullies, and this may reflect potential differences in the way that aggression is used between these two groups. Bully-victims are likely to represent the coercive and socially marginalized aggressors described by resource control theories (Rodkin et al., 2015). This group may lack efficient cognitive, social, and emotional skills (Haynie et al., 2001; Unnever, 2005), and fail to successfully use a combination of coercive and prosocial strategies in their pursuit of social dominance (Hawley, 2003, 2014). Bully-victims may therefore experience feelings of hopelessness and social defeat (Björkqvist, 2001), and this could account for some of the adverse physical and psychological outcomes reported for this group (Haynie et al., 2001; Wolke et al., 2013). Thus although bullies and bully-victims appear to have a similar impact on their social worlds, their social experiences are distinct (Farmer et al., 2010), and our findings show that having high social impact is not necessarily a positive attribute for overall sociometric status.

Gender and sociometric status

In the present study, gender did not have an effect on social impact or social acceptance. With regards to perceived popularity, males overall were perceived to be more popular than females. However this significant finding was attributable to the interaction effect found between role and gender within the bully group only. Similarly, although no overall gender differences were found for social acceptance, for the bully group only, males were significantly higher in social acceptance than females. It has been reported that aggressive females are often less accepted by peers than aggressive males (Cillessen & Borch, 2006; Cillessen & Mayeux, 2004; Salmivalli, Kaukiainen, & Lagerspetz, 2000), and our findings for the bully group partially support this. However similar gender differences were not found for bully-victims, despite the highest levels of aggression associated with this group (Craig, 1998; Veenstra et al.,

2005). This difference may be partly attributed to bullies' more frequent use of indirect forms of aggression, which has been found to impact less negatively on the social acceptance of males (Cillessen & Borch, 2006; Salmivalli et al., 2000). Past findings for gender differences with regards to popularity and acceptance have been inconsistent (de Bruyn et al., 2010; Sentse et al., 2015a), however exploring these differences can provide useful insight into how the motivations, forms, and outcomes of bullying involvement may vary across genders.

Limitations

There are a number of limitations to this study. Firstly, the design was cross-sectional and therefore causality cannot be inferred from the associations reported. Previous longitudinal studies have reported associations in both directions (Cillessen & Borch, 2006; Cillessen & Mayeux, 2004; Prinstein & Cillessen, 2003; Reijntjes et al., 2013b), and some suggest that bullying/victimisation and popularity reinforce each other over time (Cillessen & Mayeux, 2004; Sentse et al., 2015a). Secondly, a number of potentially influential physical characteristics (i.e., attractiveness or athleticism) were not assessed. These attributes have shown associations with both popularity and bullying/victimisation (Stoltz et al., 2016; Vaillancourt et al., 2003), and have been reported to strengthen the relationship between bullying (and relational aggression) and popularity (Dijkstra, Lindenberg, Verhulst, Ormel, & Veenstra, 2009). It is therefore possible that having positive physical attributes, along with other peer-valued characteristics, could influence the associations reported here, and have potentially varying effects on sociometric outcomes for males and females (Cillessen & Borch, 2006; Vaillancourt & Hymel, 2006).

Although a major strength of this study was the combined use of self- and peer-reports to identify those involved in bullying, the levels of agreement between these measures were poor. However poor correspondence between self-reports and peer-nominations has been reported previously (Cornell & Brockenbrough, 2004), and the combined use of the self- and peer-report methods in this study, as used in other fields of study (e.g. mental health), ultimately reduces the influence of shared variance on the findings reported. It is clear from our results that many bullies do not self-identify (i.e., it is unlikely that 591 victims are bullied by only 60 bullies), therefore obtaining data from

different informants, i.e., through peer-nominations, offers greater protection against bias and potentially more reliable judgements than self-reports alone (Ladd & Kochenderfer-Ladd, 2002). Researchers should work towards reaching a consensus in how bullying/victimisation is measured in order to produce more consistent and comparable findings across studies.

Conclusion

Adolescent bullies, victims, and bully-victims have a greater impact on their social worlds than those not involved in bullying. Bullies receive social rewards in the form of increased perceived popularity amongst peers, and changing behaviour of a popular bully is a challenging task. Interventions need to consider alternative and ultimately more prosocial means by which bullies can maintain their social status (Garandeau et al., 2014a). On the other hand, those who are victimised appear to be neither the popular nor accepted members of the classroom. The contribution that being a bully, victim, or bully-victim has on sociometric outcomes, beyond other individual characteristics, suggests a need for interventions to focus on improving the social status of victims and bully-victims, and address the whole group in attempts to inhibit the social environment that allows bullies to thrive.

CHAPTER EIGHT – Differences in the early stages of social information processing for adolescents involved in bullying

Bullying victimisation has commonly been associated with deficiencies in social information processing (SIP). In contrast, findings regarding bullying perpetration are mixed, with some researchers claiming that bullies may have superior SIP abilities than victimised or uninvolved youth. This study investigated the effects of bullying and victimisation on early SIP; specifically the recognition and interpretation of social information. In stage 1, 2782 adolescents (11-16 years) were screened for bullying involvement, and in stage 2, 723 of these participants (mean age=13.95) were assessed on measures of emotion recognition, hostile attribution bias, and characterological self-blame (CSB). No associations between bullying and early SIP were found. In contrast, victimisation was associated with more hostile attribution bias and CSB attributions. Girls performed better than boys on the emotion recognition task while boys showed greater hostile attribution biases. No interaction effects of bullying or victimisation with gender were found. Follow-up categorical analyses that considered pure victims versus victims who also bullied (bully-victims) on SIP, found a similar pattern of findings. These findings suggest that those who purely bully others are neither superior nor deficient in the early stages of SIP. Victimised adolescents, however, show biases in their interpretations of social situations and the intentions of others. These biases may lead to maladaptive responses and may increase risk for further victimisation by peers.

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8.1. Introduction

Adolescence is a critical period for social development, when relationships with peers become increasingly dominant and influential (Knoll, Magis-Weinberg, Speekenbrink, & Blakemore, 2015). Negative social relationships and experiences can lead to adverse and potentially long-lasting effects on health and well-being (Wolke & Lereya, 2015). One prominent example is bullying. Defined as unwanted and repeated aggression involving an imbalance of power (Gladden et al., 2014), bullying is a highly prevalent problem for children and adolescents. The typical school bully has been stereotyped as impulsive and socially incompetent. However many have questioned this stereotype, as well as inconsistencies in how social competence has been defined (Arsenio & Lemerise, 2001; Sutton et al., 1999a; Sutton et al., 1999b).

There are distinct social attributes and outcomes associated with bullying and victimisation (Haynie et al., 2001; Veenstra et al., 2005). Despite being disliked by many of their peers, bullies often hold a high social status, are perceived as popular, and have relatively positive long term social outcomes (Garandeau et al., 2014a, 2014b; Wolke et al., 2013). Conversely, victims report more loneliness, have few friendships, and are often seen as unpopular by their peers (Pouwels et al., 2016; Veenstra et al., 2005). Differences in social competence, and in particular the way that social information is processed, may account for some of the difference in attributes and outcomes associated with bullying and victimisation. It remains a matter of debate whether those who bully are deficient or potentially superior in their social information processing (Crick & Dodge, 1996, 1999; Sutton et al., 1999a; Sutton et al., 1999b).

The Social Information Processing (SIP) Model (Crick & Dodge, 1994; Dodge, 1986), has been widely used to describe how cognitive and behavioural responses are generated from the way that social information is managed (Lemerise & Arsenio, 2000). The early stages of SIP involve the encoding and interpretation of cues obtained from social situations, from which our desired goals are clarified. Possible responses are then generated and evaluated, and in the final stage the chosen response is enacted. According to the SIP Model, accurate processing within these initial stages is critical for implementing appropriate behaviour in response to social cues. Bullying perpetration is considered to be maladaptive behaviour and is thought to arise from deficiencies, or persistent biases, in the early stages of SIP (Crick & Dodge, 1999; Hazler, 1996;

Randall, 1997). However those who are victimised may also show deficits in the recognition and interpretation of social events (Woods et al., 2009; Ziv et al., 2013). There have been inconsistent reports regarding the abilities and/or deficiencies in SIP of those who bully and those who are victimised.

The first stage of SIP relies on the ability to acknowledge and correctly identify the thoughts, feelings, and behaviour of others. Emotion recognition is a basic yet fundamental skill which is important for our social and cognitive development (Nowicki & Duke, 1994). Deficiencies at this initial stage of processing have been associated with aggression (Fine et al., 2004; Schultz et al., 2000; Schultz, Izard, & Bear, 2004) and conduct problems (Blair & Coles, 2000; Sharp, 2008). Few studies have investigated emotion recognition with regards to bullying/victimisation (Ciucci et al., 2014) and findings are mixed. In general, no differences have been found between the emotion perception ability of bullies and their peers in childhood (Camodeca & Goossens, 2005; Woods et al., 2009) or adolescence (Ciucci et al., 2014). Victimisation has been associated with poor social-cognition (Gini, 2006b); however it is unclear if this is due specifically to deficits in the initial encoding of emotional and social cues. Woods et al. (2009) found that children identified as relational or overlap victims (i.e., those victimised by multiple means) performed poorer than uninvolved children at recognising angry and afraid faces. In adolescence, however, this association was reported only for boys who were victims of cyber-bullying (Ciucci et al., 2014).

The second stage of SIP is the interpretation of social cues, i.e. how we interpret situations or the behaviour of others, and research has often focussed on attribution biases relating to aggressive behaviour (Sutton et al., 1999a). Hostile attribution bias describes a tendency for interpreting situations or the intentions and behaviour of others as hostile, even when there is conflicting, missing, or ambiguous information. Both bullies and victims have been reported to make more hostile attributions in response to ambiguous social information than uninvolved children or adolescents (Camodeca & Goossens, 2005; Ziv et al., 2013); however these findings have not always been supported (Camodeca et al., 2003; Pouwels et al., 2015)

The attribution style of bullies and victims may also differ. Attribution style is largely reflected in the type of causal attributions that are endorsed about why a situation has occurred, or how we explain our own and others' behaviour (Georgiou & Stavrinides,

2008). Characterological self-blame (CSB) attributions are those in which the occurrence of, predominantly negative, events are attributed to uncontrollable and unchangeable aspects of ourselves, i.e., “it is just something about me” (Graham & Juvonen, 2001). CSB is considered to be closely related to self-esteem (Janoff-Bulman, 1979), and the uncontrollability aspect of these attributions in particular has shown strong associations to depression and loneliness (Anderson & Arnoult, 1985; Anderson & Riger, 1991). Victims of bullying have been reported to endorse more CSB attributions than non-victims (Georgiou & Stavrinides, 2008; Graham & Juvonen, 1998, 2001), whereas children who bully may favour more external attributions for situations of peer violence (Georgiou & Stavrinides, 2008). Overall, the attributional styles of adolescent victims and perpetrators of bullying have received little empirical attention from researchers, and the extent to which these roles may differ in this aspect of SIP is unclear.

To summarise, there is considerable uncertainty whether victimisation and/or perpetration of bullying in adolescence is associated with deficiencies in the initial recognition and interpretation stages of SIP, or whether neither group are different from those uninvolved in bullying. While hostile biases in interpretations have been found for aggressive youth, we are still uncertain whether this extends specifically to those who bully. Furthermore, it remains unclear whether victims and perpetrators differ in their ability to recognize the emotions of others, or whether a greater distinction between these roles can be found in their attributions of blame.

This study aimed to investigate the early SIP abilities associated with bullying and victimisation. Adolescents were assessed on emotion recognition, attributions of intent, and attributions of blame. We predicted that those who bully would accurately identify the emotions of others, but show hostile biases in their interpretations of social situations and behaviour of others. Victims would show similar biases for making hostile interpretations but also select more attributions of characterological self-blame. We repeated the analyses using categorical groups to investigate whether those who both bully and are victimised (i.e., bully-victims), are more similar to those who are pure victims or pure bullies. Bully-victims have been reported to show the worst social, psychological, and behavioural difficulties and outcomes of those involved in bullying (Haynie et al., 2001; Lereya et al., 2015; Schwartz, 2000), and warrant separate consideration regarding SIP compared to victims and bullies.

8.2. Method

8.2.1. Design

The current study (The Bullying, Appearance, Social information processing and Emotions Study; BASE) involved a two-stage sampling design involving adolescents from five UK secondary schools. Stage 1 used both self-report and peer-nomination measures to screen adolescents for involvement in bullying. The responses on these bullying measures first identified participants who perpetrated or were victims of bullying, and for the secondary analyses, participants were also assigned to a 'bullying' role (i.e. bullies, victims, bully-victims, and uninvolved). For stage 2, selected participants were assessed for emotion recognition, hostile attribution bias, and attributions of self-blame.

8.2.2. Sample

During stage 1, 3883 11-16 years-olds were invited to participate in a study about peer relationships, of which 2782 (71.6%) were screened for bullying involvement using self-reports and peer-nominations. These pupils were obtained from five predominantly mixed-sex secondary schools within the UK (Wolke et al., 2017). Based upon the data for self-reported and peer-nominated bullying involvement, a total of 1088 pupils were selected for stage 2 and for each school, those who participated in both stages were entered into a prize draw to win a £50 voucher.

Of the 1088 pupils selected for stage 2, 276 (25.4%) were absent or could not take part due to organisational difficulties within schools (i.e. timetabling, access to computers, exams). Twelve pupils were unable to participate due either to their school's concerns about vulnerability (n=5) or parent and/or child refusals (n=7), and a further seven were excluded (incorrect pupil attended, n=1; participant used for a pilot study, n=6). The final sample comprised 754 pupils with complete data for the bullying/victimisation measure, of which 53.6% were female. The majority of participants were white British (85.3%) and the mean age of the sample was 13.95 years (SD=1.34).

8.2.3. Measures

Peer bullying:

Self-reported bullying involvement was assessed using the Bullying and Friendship Interview schedule (Wolke et al., 2000). For this measure, pupils were provided with behavioural descriptions of bullying/victimisation. The first 13 items assessed experience of different types of victimisation; direct (e.g., “been hit or beaten up”), relational (e.g. “had lies/nasty things said about you”), and cyber (e.g. “had rumours spread about you online”), and pupils were asked how frequently each behaviour had happened to them in the last six months. For each item, participants could respond with “never”, “sometimes”, “quite a lot” (several times a month), or “a lot” (at least once a week). Only responses of “quite a lot” or “a lot” were considered indications of victimisation (Wolke et al., 2001a; Woods & Wolke, 2004). The same 13 items were then adapted to assess bullying perpetration.

For the peer-nomination measure of bullying involvement, pupils were given a numbered list of the names of the other students in their tutor/form group (broadly equivalent to the ‘homeroom’ in US schools). Each participant could nominate up to three of these students (and not themselves) who were either the victims or the perpetrators of the behaviour described. These descriptions corresponded to those used for the self-report measure of direct and relational bullying (e.g. Some people repeatedly leave people out of get-togethers, parties, trips or groups, get others to ignore people, or spread nasty lies, rumours, or stories about people on purpose. Which people in your form/tutor do this?”). This study used nominations limited to three pupils, similar to procedures reported previously (de Bruyn et al., 2010; Juvonen et al., 2003; Schwartz, 2000). It is argued that by limiting nominations, participants are required to think about who best fits the description, rather than simply nominating several classmates.

For this measure, bullying and victimised pupils were identified if their z-score (using the number of nominations received at the tutor group level) was one standard deviation above the mean (>1SD) of their tutor group for bullying or victimisation (Wolke et al., 2017).

Emotion Recognition:

To assess emotion recognition, items were used from the Child's version of the ''Reading the Mind in the Eyes Test'' (Baron-Cohen et al., 2001). The original child measure consists of 28 photographs showing only the eye region of people's faces and participants are asked to select which of four words best describes what that person is thinking or feeling. In this study, eight items were selected, representing an equal number of males and females and a wide range of ages. Only one word for each photo was deemed correct and the order of responses was randomised. Across the eight items, the number of correct responses was calculated to give a total score for the Eyes Test. Good test-retest reliability has been reported for the adult version: intraclass correlation coefficient (ICC) = .63 ($p<.01$) (Fernández-Abascal et al., 2013), and child version: limits of agreement (Bland Altman) = $\pm$ 4.3 (Hallerbäck et al., 2009).

Attributions of Intent: Hostile Attribution Bias:

Hostile attribution biases have been assessed using a range of stimuli including stories, pictures, or films to depict ambiguous social scenes, situations, and behaviour (Crick & Dodge, 1996; Dodge & Coie, 1987). For this study, a new measure was constructed in which pupils were shown photographs of social situations. Each photograph showed an ambiguous scene in which the behaviour or situation shown could be interpreted as harmless or hostile. Eight photographs were selected based upon data from a pilot study which was conducted online with 27 adolescents (mean age=15.56 years, female=70.4%) who were members of an educational social network for young people aged 13-18 years (i.e., IGGY; www.iggy.net). The photographs selected were those which received the most variation in responses, but also depicted different types of potential bullying (i.e. physical, relational, cyber or sibling) and varied in the gender of perpetrator(s)/victims(s). In this pilot sample of participants, Cronbach's alpha for the eight selected photographs was .69 and thus all items were retained.

For each item, participants were asked to select one of four statements that best described what was happening in the picture. The responses varied in the harmful intent of the 'perpetrator(s)' in the photographs from 0) the most innocent (e.g. 'The two boys are telling jokes and laughing') to 3) the most hostile (e.g. 'The boys are telling a

nasty joke about the other boy and laughing about him'). The order of the responses was reversed for half of the items. Across the eight items, the number of 'most hostile intent' attributions were totalled to give a hostile attribution score, in which higher scores indicated more bias. In the current study, Cronbach's alpha for this measure was .56.

Attribution Style: Characterological Self-Blame (CSB):

This measure of attribution style consisted of six short vignettes which described hypothetical ambiguous social situations. Five of these vignettes were based upon those already used in the assessment of attributions (Crain et al., 2005; Crick, 1995), with slight word adaptations to ensure they were age appropriate and relevant. A sixth vignette was newly added as shown below:

'You have texted your friend Jade and did not get a reply, however then you see Jade has written a Facebook status from her phone since receiving your message and therefore must have been on her phone and seen your text. How would you explain this behaviour?

1. Jade always replies to everyone else's texts but never yours. She obviously prefers her other friends to you and therefore treats them better (Characterological self-blame)
2. Jade may have seen your text and then been distracted and forgot to reply; your friends do this a lot. (External blame)
3. You must have upset Jade in some way because she would never normally ignore you like this. (Behavioural self-blame)
4. It's possible that Jade's phone is not working properly and she may not have received your text. (External blame)'

These vignettes were piloted on a sample of 140 UK students (mean age=19.76 years, males=50.7%) to check for ambiguity. Based upon previous research highlighting the distinction between characterological self-, behavioural self-, and external blame attributions (Graham & Juvonen, 1998; Janoff-Bulman, 1979), responses were coded into these attribution styles. In the example, responses are labelled accordingly. For each item, two responses reflected external blame in order for a characterological self-

blame bias to be more stringently identified. The number of each type of attribution made was calculated across the six vignettes. The focus of the analysis was on the number of CSB attributions made as they are considered to be the most maladaptive (Graham & Juvonen, 1998), and therefore a good reflection of deficiencies in this aspect of interpretation. Past measures for assessing the controllability dimension of attributional style have yielded modest Cronbach's alpha levels of .51 to .60 (Anderson et al., 1988; Anderson & Riger, 1991). Similarly, relatively low reliability was found for the vignettes used in this study (Cronbach's α=.48).

Demographic Data:

During stage 1, pupils self-reported their gender, their parent's highest level of education, and their date of birth; from which an age in years variable was calculated. Parent's education was dichotomised into 1-11 years (no education to basic schooling) and >11 years (further education; i.e., college or university), and ethnicity was dichotomised into 'White British' and 'Minority'. Schools provided data on attendance rate (%) and pupil premium status (yes/no). In the UK, pupil premium refers to extra funding that schools receive to promote attainment in disadvantaged pupils. This includes pupils who have been (in the past six years) eligible for free school meals. Pupil premium status for each pupil was obtained as an indicator of deprivation and/or financial assistance.

8.2.4. Procedure

This study was reviewed and received full ethical approval by the university's ethics committee. Schools were contacted and, following confirmation of their participation, written details of the study were provided alongside consent forms for pupils and parents. Written informed consent was obtained from all pupils prior to assessment and passive consent (via an opt-out procedure) was obtained from parents. The measures were completed online in groups of 20-30 pupils during one lesson (approximately 50-60 minutes) throughout the school day. At the start of each session, pupils were reminded about the purpose and nature of the study via a written overview, and were

given standardised instructions for completing the survey. The survey was accessed via individual passwords and all measures were counterbalanced. For ethical and data quality purposes, questionnaires could only be completed whilst a researcher and a member of teaching staff were present. Data collection took place between October 2014 and July 2015, with approximately 1-2 months between stage 1 and 2.

8.2.5. Analysis

Participants with more than one missing item on any measure were excluded from the analyses (n=31). Bivariate analyses (chi-square comparisons, one-way ANOVAs) were conducted on the demographic data to identify differences between the bullying and victimisation roles, and any of the demographic variables that significantly differed between these bullying roles were included in the subsequent analyses as covariates, to control for any confounding effects. In the primary analysis, for each SIP measure, three-way ANCOVAs were conducted to investigate the effects of bullying (bully/not a bully), victimisation (victim/not a victim), and gender, and any interaction effects from these variables. Gender was included in the model due to reported differences between boys and girls in regards to involvement in bullying (Cook et al., 2010; Scheithauer, Hayer, Petermann, & Jugert, 2006). Secondly, to explore how bully-victims may differ to other roles (i.e., bullies, victims, and uninvolved), individual ANCOVAs and Bonferroni adjusted post-hoc comparisons were conducted for each measure. A significance level of $p<.05$ was set for all analyses and values for partial eta squared will be reported as a measure of effect sizes. These values will be interpreted using the previously reported guidelines of .0099, .0588, and .1379 as indicators of small, moderate, and large effect sizes, respectively (Cohen, 1977; Richardson, 2011). All analyses were computed using SPSS version 22.

Table 8.1 Descriptive data for participants (split by bullying and victimisation). All numbers are percentages, unless otherwise stated

			Bully		Victim	
		Total	Yes	No	Yes	No
	N	*723*	*397*	*326*	*421*	*302*
	(%)		*(54.9)*	*(45.1)*	*(58.2)*	*(41.8)*
Gender	*Girls %*	53.9	52.3	47.7	59.0	41.0
	Boys %	46.1	58.0	42.0	57.4	42.6
Age (in years)	*Mean*	13.95	14.09	13.78	13.93	13.98
	(SD)	(1.35)	(1.30)	(1.38)	(1.30)	(1.40)
Ethnicity	*White British %*	85.5	54.1	45.9	59.2	40.8
	Minority %	14.5	60.0	40.0	52.4	47.6
Attendance	*Mean*	95.42	95.39	95.46	95.22	95.70
	(SD)	(4.67)	(4.48)	(4.90)	(4.85)	(4.40)
Parent Education	*≤11 years %*	14.7	66.1	33.9	68.5	31.5
	>11 years %	85.3	51.6	48.4	55.2	44.8
Pupil Premium	*Yes %*	22.8	56.6	43.4	60.4	69.6
	No %	77.2	54.6	45.4	57.9	42.1

8.3. Results

8.3.1. Descriptive Statistics

The exclusion of missing data resulted in a final sample of 723 pupils with complete data for all measures. These participants were allocated to bullying groups; 'bully yes' (*n* =397) and 'bully no' (*n* =326), and also victimisation groups; 'victim yes' (*n*=421) and 'victim no' (*n* =302) (table 8.1). Of the demographic data obtained, age showed significant differences between the bully yes (*M*=14.09, *SD*=1.30) and bully no (*M*=13.78, *SD*=1.38) groups ($F(1,721)=9.680$, $p=.002$). The percentage of pupils with pupil premium status differed between the bully yes (27.5%) and no (17.2%) groups ($\chi^2(1,723)=10.736$, $p=.001$), and also between the victim yes (26.8%) and no (17.2%) groups ($\chi^2(1,723)=9.244$, $p=.002$). These variables were therefore included as covariates in all models. The number of participants within each tutor group ranged from 15-36 (*M*=26.76, *SD*=4.30).

8.3.2. Primary Analysis: The effects of bullying, victimisation and gender on early SIP

Emotion Recognition:

There was no significant main effect of bullying ($F(1,713)=.003$, $p=.955$, $\eta\rho^2=.000$), or victimisation ($F(1,713)=1.779$, $p=.291$, $\eta\rho^2=.002$) on scores for emotion recognition. Gender had a small but significant main effect ($F(1,713)=4.258$, $p=.039$, $\eta\rho^2=.006$), whereby girls (*M*=5.15, 95% CI=5.02, 5.28) gave more correct responses on this measure than boys (*M*=4.95, 95% CI=4.81, 5.09). There were no significant interactions between bullying and victimisation, or between bullying, victimisation, and gender. Neither age nor pupil premium covariates had a significant main effect on emotion recognition

Hostile Attribution Bias:

There was a significant main effect of victimisation ($F(1,713)=5.006$, $p=.026$, $\eta\rho^2=.007$) on hostile attribution bias, whereby those who were victimised ('victim yes'; $M=2.38$, 95% CI=2.22, 2.54) attributed more hostile intent to the ambiguous photographs than non-victimised participants ('victim no'; $M=2.11$, 95% CI=1.93, 2.29) (figure 8.1). A main effect was also found for gender ($F(1,713)=11.499$, $p=.001$, $\eta\rho^2=.016$), in which boys ($M=2.45$, 95% CI=2.27, 2.62), showed a greater hostile attribution bias than girls ($M=2.04$, 95% CI=1.88, 2.20). There was no significant main effect of bullying ($F(1,713)=2.032$, $p=.154$, $\eta\rho^2=.003$), nor any significant interactions between bullying and victimisation, or between bullying, victimisation, and gender.

Of the covariates included in the model, there was a significant main effect of age ($F(1,713)=67.904$, $p<.001$, $\eta\rho^2=.087$); the number of hostile intent attributions decreased with increasing age ($r(723)= -.292$, $p<.001$). There was no main effect of pupil premium status on hostile attribution bias.

Characterological Self-Blame (CSB):

Only victimisation was found to have a significant main effect on the number of CSB attributions made for the social vignettes ($F(1,713)=20.434$, $p<.001$, $\eta\rho^2=.028$); although the effect size was small (figure 8.2). CSB responses were selected more often by victimised ('victim yes'; $M=1.51$, 95% CI=1.39, 1.63) than non-victimised youth ('victim no'; $M=1.10$, 95% CI=.962, 1.23). There were no main effects of bullying ($F(1,713)=.003$, $p=.959$, $\eta\rho^2=.000$) or gender ($F(1,713)=1.454$, $p=.228$, $\eta\rho^2=.002$), and no significant interactions between bullying and victimisation, or between bullying, victimisation, and gender.

Finally, no covariates included in the model, i.e., age and pupil premium, had a significant main effect on the number of CSB attributions made.

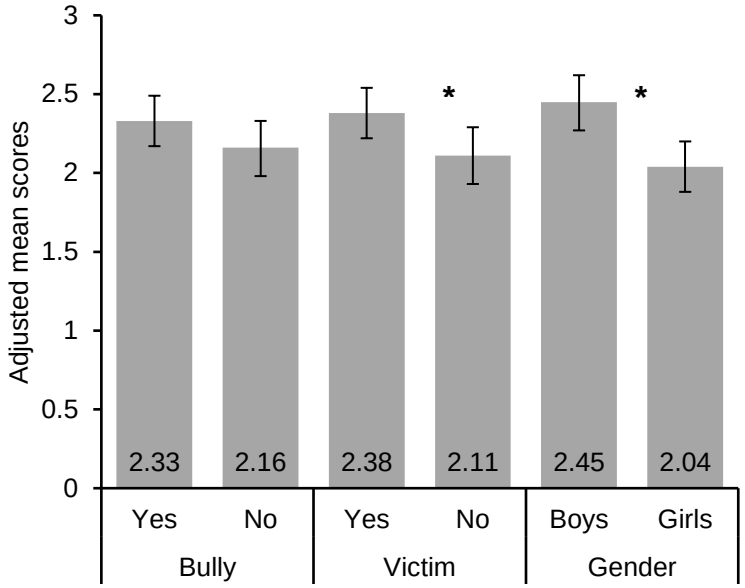

Figure 8.1 Hostile Attribution Bias: Adjusted group means (including 95% confidence intervals). ***** = significant main effect of victimisation (*F*(1,713)=5.006, *p*=.026), and gender (*F*(1,713)=11.499, *p*=.001)

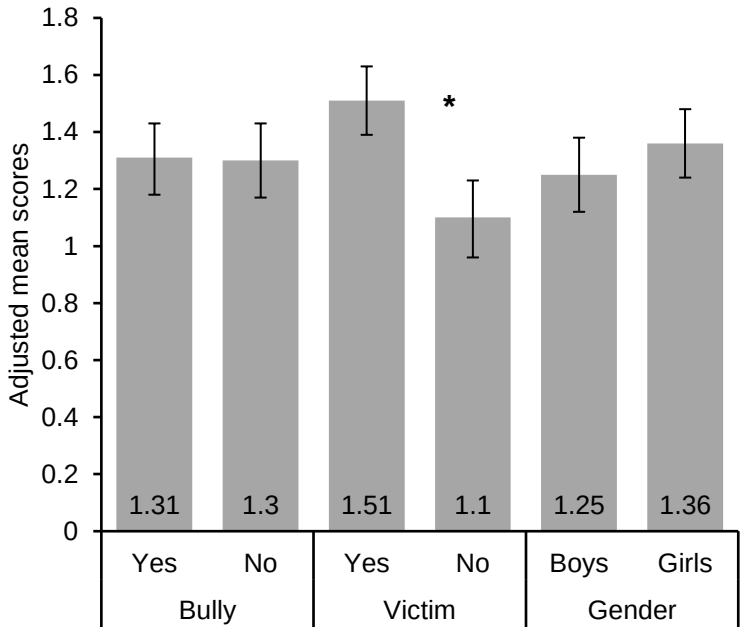

Figure 8.2 Characterological self-blame: Adjusted group means (including 95% confidence intervals). ***** = significant main effect of victimisation (*F*(1,713)=20.434, *p*<.001)

8.3.3. Secondary analysis: comparisons between the bully, victim, bully-victim and uninvolved roles

Participants were assigned to a role (i.e., bully, victim, bully-victim, or uninvolved) via classification rules (Wolke et al., 2017) (see table 6.4). Descriptive data for the roles are displayed in table 8.2, and the results of the one-way ANCOVAs and Bonferroni comparisons for each SIP measure are reported in table 8.3 and 8.4. A small but significant main effect of role was found for hostile attribution bias ($F(3,716)=3.044$, $p=.028$, $\eta\rho^2=.013$) and characterological self-blame ($F(3,716)=7.840$, $p<.001$, $\eta\rho^2=.032$), but not for emotion recognition ($F(3,716)=.397$, $p<=.755$, $\eta\rho^2=.002$). Of the covariates included in the ANCOVA models, i.e., age and pupil premium, there was a main effect of age on hostile attribution bias ($F(1,716)=68.016$, $p<.001$, $\eta\rho^2=.087$), whereby the number of hostile intent attributions decreased with increasing age ($r(723)= -.292$, $p<.001$).

Bonferroni adjusted comparisons revealed that bully-victims gave significantly more hostile attributions of intent than uninvolved pupils (2.35 ± 1.60 vs 1.97 ± 1.65, $p=.032$), and significantly more characterological self-blame attributions for the social vignettes (1.43 ± 1.24 vs $.99 \pm 1.10$, $p=.003$). Similarly, victims gave significantly more characterological self-blame attributions than uninvolved peers (1.60 ± 1.21 vs $.99 \pm 1.10$, $p<.001$) and bullies (1.60 ± 1.21 vs 1.20 ± 1.14, $p=.021$). Bully-victims showed no significant differences to either bullies or victims on any of the SIP measures.

Table 8.2 Descriptive data for participants (split by bullying role). All numbers are percentages, unless otherwise stated.

			Bullying Role			
		Total	**Bully**	**Bully-Victim**	**Victim**	**Uninvolved**
	N	*723*	*142*	*255*	*166*	*160*
Gender	*Girls %*	53.9	19.7	32.6	26.4	21.3
	Boys %	46.1	19.5	38.5	18.9	23.1
Age (in years)	*Mean*	13.95	14.15	14.05	13.74	13.82
	(SD)	(1.35)	(1.39)	(1.25)	(1.37)	(1.39)
Ethnicity	*White British %*	85.5	18.3	35.7	23.5	22.5
	Minority %	14.5	27.6	32.4	20.0	20.0
Attendance	*Mean %*	95.42	95.36	95.41	94.93	96.00
	(SD)	(4.67)	(4.68)	(4.38)	(5.51)	(4.13)
Parent Education	*≤11 years %*	14.7	19.8	36.8	23.6	19.8
	>11 years %	85.3	20.0	33.4	23.0	23.6
Pupil Premium	*Yes %*	22.8	19.4	46.7	21.8	12.1
	No %	77.2	19.7	31.9	23.3	25.1

Table 8.3 Raw and adjusted role means (and standard deviations) and the effects of role and gender on the early SIP measures.

		Emotion Recognition			Hostile Attribution Bias [a]			Characterological Self-Blame		
Role	*N*	*M*	*SD*	M_{adj}	*M*	*SD*	M_{adj}	*M*	*SD*	M_{adj}
Bully	142	5.03	1.17	5.11	2.19	1.68	2.28	1.20	1.14	1.19
Bully-victim	255	5.05	1.26	4.99	2.35	1.60	2.38	1.43	1.24	1.43
Victim	166	4.98	1.28	5.01	2.40	1.69	2.37	1.60	1.21	1.59
Uninvolved	160	5.13	1.36	5.09	1.97	1.65	1.94	.99	1.10	1.00
Total	723	5.10	1.24		2.25	1.65		1.33	1.20	
	df	*F*	*p*	np^2	*F*	*p*	np^2	*F*	*p*	np^2
Role	3	.397	.755	.002	3.044	.028	.013	7.840	.000	.032
Gender	1	4.401	.036	.006	11.757	.001	.016	2.309	.129	.003

NOTE: *M_adj* = adjusted mean.
Covariates included in all ANCOVA models were age (in years) and pupil premium status (yes/no).
[a] The covariate of age had a significant main effect on hostile attribution bias ($F(1,716)=68.016$, $p<.001$, $\eta\rho^2=.087$), whereby the number of hostile intent attributions decreased with increasing age ($r(723)= -.292$, $p<.001$).

Table 8.4 Post hoc comparisons (Bonferroni adjusted) between roles.

	Hostile Attribution Bias			Characterological Self-Blame		
	Mean Difference (95% CI)	***SE***	***p***	**Mean Difference (95% CI)**	***SE***	***p***
Uninvolved vs Bully	-.346 (-.825, .133)	.181	.339	-.189 (-.552, .175)	.138	1.000
Uninvolved vs Bully-victim	-.446 (-.868, -.023)	.160	.032	-.424 (-.744, -.103)	.121	.003
Uninvolved vs Victim	-.436 (-.896, .024)	.174	.075	-.588 (-.937, -.239)	.132	.000
Bully vs Bully-victim	-.100 (-.533, .334)	.164	1.000	-.235 (-.564, .094)	.124	.357
Bully vs Victim	-.090 (-.565, .385)	.180	1.000	-.400 (-.760, -.039)	.136	.021
Victim vs Bully-victim	-.010 (-.426, .406)	.157	1.000	.165 (-.152, .481)	.119	1.000

NOTE: 95% CI = 95% confidence intervals. Significance at $p<.05$ level.

8.4. Discussion

For the first stage of social information processing, neither bullying nor victimisation was associated with emotion recognition ability. Consistent with previous findings, no differences in emotion recognition were found between the bullying roles (Camodeca & Goossens, 2005; Ciucci et al., 2014). These findings suggest that involvement in bullying may not be associated with deficits at this stage of SIP. For the next stage of processing, victimised adolescents showed biases in their interpretation of social information. Victimisation was associated with a bias for endorsing characterological self-blame attributions, whereas a greater hostile attribution bias was found among bully-victims specifically. Overall the effect sizes were small.

In contrast to the findings for general aggression and conduct disorder, bullying perpetration was not associated with notable deficiencies in early social information processing. These findings do not support the view that bullies are socially incompetent as historically portrayed (Crick & Dodge, 1996, 1999; Randall, 1997). However, we can neither conclude that bullies are superior in their social information processing skills. Thus rather than bullying behaviour being explained by inaccuracies in the recognition or interpretation of social information, it may be more likely explained by the way this information is used (Arsenio & Lemerise, 2001; Sutton, Smith, & Swettenham, 2001; Ziv et al., 2013). Arsenio and Lemerise (2001) proposed that emotions play an important role in how social information is processed and used, and indeed the nature of bullies has been described as cold, Machiavellian, callous, and un-empathic (Ciucci & Baroncelli, 2014; Sutton & Keogh, 2001; Zych et al., 2017). These emotional and personality attributes may therefore influence the use of bullying behaviour for potential material or social gains (Sutton et al., 1999b; Volk et al., 2012; Volk et al., 2015) .

On the other hand, these results suggest that those who are victimised show the most interpretation biases in the early stages of social information processing. Consistent with previous findings (Georgiou & Stavrinides, 2008; Graham & Juvonen, 1998), victimisation was associated with a greater use of characterological self-blame attributions, and this tendency was shown by both victims and bully-victims. These biases may be manifestations of the low self-esteem and self-worth that have been reported for those who are victimised (Haynie et al., 2001; Lee et al., 2017b), and are reinforced by experiencing further negative outcomes, i.e., bullying (Rosen et al.,

2009). Thus a repeated cycle of negative expectations and negative outcomes may increase feelings of hopelessness, which has been associated with internalising disorders, i.e., depression (Pinto & Francis, 1993), and more recently victimisation (Radliff, Wang, & Swearer, 2016). Hopelessness as a result of persistent self-blame may account in part for the poor outcomes in psychological health and well-being often reported for victimised youth (Takizawa et al., 2014; Wolke et al., 2013; Wolke & Lereya, 2015).

Victimisation was associated with greater interpretations of hostility within ambiguous social situations, and this bias was exhibited the most by bully-victims. The reason for this is unclear. Both bullies and victims experience hostile interactions from their involvement in bullying; however these roles do not show the same level of attribution bias. Because of their dual involvement as both a bully and a victim, bully-victims may be more frequently exposed to hostile situations (Dodge, 2006), and this exposure could add further strength to these biases (Pouwels et al., 2015). Bully-victims are most like the aggressive child described in the SIP model; exhibiting high levels of reactive aggression and retaliatory behavioural responses. However this aggression is often unsuccessful in gaining dominance and may lead to further ostracism, hostility, and victimisation by peers. Bully-victims may therefore experience chronic stress in the form of social defeat (Björkqvist, 2001), which is associated with low self-esteem, depression, and other clinical disorders (Hamilton, Newman, Delville, & Delville, 2008; Lee et al., 2017b). This may explain why bully-victim status is associated with the worst behavioural problems and poorest outcomes (Haynie et al., 2001; Schwartz, 2000; Wolke et al., 2013). However, overall, associations between victimisation and both self-blame and hostile attribution biases were small, suggesting that there are other major factors involved in victimisation beyond deficits in early SIP.

Attribution biases may be reasonable responses to the aggression that victimised adolescents frequently face, and may therefore reflect accurate interpretations based on their own social experiences. Why bully-victims engage in aggression while victims do not, is likely due to a combination of individual and familial characteristics (Hanish & Guerra, 2004; Lereya et al., 2013a; Veenstra et al., 2005), however the greater bias shown by bully-victims for making hostile attributions may explain their commonly aggressive and reactive behaviour within social contexts. In contrast, bullies do not need to be alert to the same potential threats, as they are often highly ranked and

dominant in the social peer structure (Garandeau et al., 2014a, 2014b) and have low levels of stress as indicated by inflammatory markers (Copeland et al., 2014).

It is somewhat surprising that no interaction effects were found , especially considering the reported differences between boys and girls in relation to bullying (Cook et al., 2010). However, some gender differences in SIP were found. Boys displayed a stronger hostile attribution bias than girls, which is in contrast to many previous studies that have reported no effect of gender on attribution bias (Camodeca et al., 2003; Perren et al., 2013). However, as De Castro et al. (2002) noted in their meta-analysis, girls have been highly underrepresented within the attribution literature, and further investigation is therefore warranted. Girls have been reported to show better emotion recognition skills than boys, however gender differences have not been consistently shown (Leppänen & Hietanen, 2001; Thomas et al., 2007). In this study, girls performed slightly better than boys on the Eyes Test, and similar findings have been reported for adult populations (Kirkland, Peterson, Baker, Miller, & Pulos, 2013). However, effect sizes are small and warrant caution in drawing strong conclusions.

This study has several strengths. To our knowledge no other study has simultaneously addressed these early stages of SIP in regards to bullying involvement in adolescence and the different roles adopted (Pouwels et al., 2015; Ziv et al., 2013). The two-stage sampling approach allowed for sufficient statistical power for group comparisons. Our assessment of adolescents also addressed a gap in previous literature, which has predominantly focussed on social information processing during childhood, despite adolescence being a period of continued and critical social development (Knoll et al., 2015).

There are also limitations. Firstly, the nature of the study is correlational, and associations need to be cautiously interpreted regarding the direction of causality. Secondly, the sample may not be representative of the UK as a whole. Thirdly, new measures were used to investigate the recognition and interpretation of social information, and the reliability coefficients for these measures were modest. The Child's Eyes Test was selected due to its relative difficulty compared with other child emotion recognition tests and was deemed more suitable for our sample. However, further research is needed to determine the suitability of the Eyes Test as a measure of emotion recognition within adolescent populations. Similarly, the ambiguous

photographs as a measure of hostile attribution bias were created for this study and further development and validation of this measure is needed.

In conclusion, our findings suggest that adolescents who bully others are neither deficient nor superior in the recognition and interpretation of social information, and are indistinguishable in the early stages of SIP from those uninvolved in bullying. In contrast, those who are victimised show biases in their interpretations of social situations, and bully-victims in particular show the strongest biases for attributing hostile intent within social situations. For victimised adolescents, these interpretations can often become reality, and their biases are thus further strengthened. Therefore, interventions may target the maladaptive responses that arise from such biases and place these adolescents at increased risk of repeated victimisation.

CHAPTER NINE – Bullying in adolescence: how do emotional traits distinguish those involved?

This study investigated the emotional attributes associated with bullying involvement in adolescence; specifically the emotional traits that distinguish bullies, victims, bully-victims, and those uninvolved. 2754 adolescents from schools in central England, UK, were screened for bullying involvement. Those identified (n=709, $M_{\_age}$=13.94 years) were assessed for empathy, callous-unemotional traits, and affective instability. Compared to uninvolved youth, bullies, and bully-victims were higher in callous-unemotional traits, and bully-victims were lower in empathy. Victims and bully-victims had higher levels of affective instability than both bullies and those uninvolved. Affective instability may be an emotional trait associated with victimisation, whereas perpetrators of bullying are characterised by callous and uncaring traits. Bully-victims have a distinct emotional profile and should be assessed as a separate group. As well as addressing the unempathic and uncaring nature of those who bully, interventions could also identify ways to help victimised adolescents attend to and regulate their emotional responses.

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9.1. Introduction

Bullying is a long-standing phenomenon that has captured media headlines, government agendas, and is a highly prevalent issue for adolescents world-wide. It is defined as unwanted aggressive behaviour, which is repeated, and where there is an observed or perceived imbalance of power (Gladden et al., 2014). There are a number of motivations proposed for bullying, with claims that it may be an adaptive behaviour to gain social dominance (Olthof et al., 2011), or increase access to resources (Volk et al., 2012). Despite existing research on the social and environmental factors associated with bullying, the individual characteristics that may explain, in part, why some adolescents bully and others are victimised remain under debate.

Bullies have been described as manipulative (Arsenio & Lemerise, 2001; Sutton et al., 1999b), and overall have adaptive social and psychological outcomes (Lereya et al., 2015). Victims have been reported to have poorer social skills (Fox & Boulton, 2006) and, emotionally, are often highly sensitive and poorly regulated (Frizzo et al., 2013; McLaughlin et al., 2009). There has been increasing interest in a third group of those who bully but are also victimised, i.e. bully-victims. Bully-victims commonly adopt a reactive style of aggression, and are suggested to experience the worst social and psychological outcomes of all those involved in bullying (Lereya et al., 2015; Salmivalli & Nieminen, 2002; Wolke et al., 2013)

There is a lack of clarity regarding the role of emotion in bullying and victimisation (Arsenio & Lemerise, 2001); in particular the emotional traits or attributes that may distinguish adolescent bullies, victims, bully-victims, and those uninvolved. Exploring these differences could help to identify those at risk of bullying involvement and aid understanding of how bullying/victimisation may be maintained. This may ultimately help to shape interventions that have commonly shown less success with adolescents (Smith, 2016).

One aspect of emotion reported to be central both in aggressive behaviour and bullying specifically is empathy (Del Rey et al., 2015; Jolliffe & Farrington, 2006b), and is often the focus of anti-bullying interventions (Farrington & Ttofi, 2009). However findings are highly contradictory (Zych et al., 2017). Empathy can be measured as a single construct, or divided into its cognitive and affective components; the ‘knowing’ and ‘feeling’ the thoughts/emotions of others. Adolescent bullies have been associated with

less affective concern for others (Gini et al., 2007; Jolliffe & Farrington, 2006a), whereas others claim that ring leaders, i.e., manipulative bullies, show higher levels of cognitive empathy and a good understanding of others' mental states (Caravita et al., 2009; Stellwagen & Kerig, 2013; Sutton et al., 1999a). There are conflicting findings that suggest bullying perpetration is in fact associated with lower cognitive empathy (Kokkinos & Kipritsi, 2012; Zych et al., 2017).

With regards to victimisation, findings are equally contradictory (Zych et al., 2017); however some reports suggest that empathy and victimisation are largely unrelated (van Noorden et al., 2015). Adolescent victims have been reported to show lower cognitive empathy, but higher levels of affective empathy (Kokkinos & Kipritsi, 2012). Empathy has been rarely studied in bully-victims specifically (Wolke et al., 2016; Zych et al., 2017), although the poor social abilities reported for this group (Haynie et al., 2001) may predict similar difficulties with cognitive empathy. Inconsistencies in findings may reflect differences in the way empathy is assessed; as a single attribute, or individual cognitive and affective units.

Callous-unemotional (CU) traits have been associated with aggression and conduct disorder (Kimonis et al., 2014; Orue et al., 2016), and are considered to be inversely related with empathy (Muñoz et al., 2011; Zych et al., 2017). Those high in CU traits are described as cold, uncaring and, Machiavellian; qualities often reported for those who bully (Sutton & Keogh, 2001). It is therefore not surprising that CU traits have also been associated with bullying perpetration during early and mid-adolescence (Ciucci & Baroncelli, 2014; Fanti et al., 2009; Viding et al., 2009); yet the number of studies on this topic remain small (Zych et al., 2017). Only one study has assessed bully-victims, finding that these adolescents may also show elevated levels of CU traits (Fanti et al., 2009). However further independent assessment of this group is needed (Zych et al., 2017). Although CU traits are considered to be unrelated to victimisation (Ciucci & Baroncelli, 2014), Zych et al. (2017) suggested that victimised children and adolescents may have higher levels of these traits than non-victims. This association has rarely been investigated, and it is unclear whether higher CU traits are characteristic of all adolescents involved in bullying, or specific to those who bully.

Affective instability (AI) has emerged as a trait (or symptom cluster) associated with internalising problems, i.e., anxiety and depression, and borderline personality disorder

(BPD) (Thompson et al., 2011; Tragesser et al., 2007). Despite a lack of consensus regarding the definition of AI, Marwaha et al. (2014) proposed that it encompasses three core elements of affect; lability (fluctuations in mood), high intensity, and low control. Child and adolescent victims have been found to display aspects of emotional instability, i.e., high emotional reactivity and poor regulation (Frizzo et al., 2013; McLaughlin et al., 2009), and are thought to be at increased risk of BPD, anxiety, and depression (Sansone et al., 2010; Winsper et al., 2012; Wolke et al., 2012). Although these outcomes are rare, AI may extend outside clinical domains and show important associations with victimisation.

Bullies have also been reported to show poor emotion regulation (Garner & Hinton, 2010); however findings often refer to difficulties shown by aggressive youth in the regulation of anger (Eisenberg et al., 2001; Sullivan et al., 2010). The strategic and instrumental aggression often used by bullies (Salmivalli & Nieminen, 2002), suggests that this group could possess a more stable and controlled style of affect than those high in reactive aggression; i.e., bully-victims (Salmivalli & Nieminen, 2002). Like victims, bully-victims are suggested to show poor emotion regulation and a tendency for emotional outbursts (Haynie et al., 2001; O'Brennan et al., 2009). These attributes may reflect elevated levels of AI in bully-victims also.

We aimed to investigate how bullies, victims, bully-victims, and uninvolved adolescents may differ in empathy, CU traits, and AI. This study adds to existing knowledge by drawing direct comparisons between bullies, victims, and most importantly bully-victims; for which findings are limited. To our knowledge, this is the first study to explore associations between bullying/victimisation and affective instability; a trait that represents key aspects of emotional instability and is thought to be a prominent symptom, or precursor, of a number of psychological disorders.

We predicted that adolescents involved in bullying would have less empathy but more CU traits than those uninvolved. Specifically, we predicted that bullies would have higher levels of CU traits and less affective empathy than victims, whereas victims would show greater levels of AI. Because of their dual role as victims and perpetrators, the emotional attributes of bully-victims are difficult to predict. However due to their reactive and aggressive nature, we expected this group would show high levels of AI, but low empathy.

9.2. Method

9.2.1. Design

The BASE (Bullying, Appearance, Social Information Processing and Emotion) Study involved a two-stage sampling design. In stage 1, adolescents from five secondary schools in Central England, UK, were screened for bullying involvement via an online survey. The data from this survey assigned participants to a 'bullying' role (i.e., bully, victim, bully-victim, or uninvolved), and in stage 2, a selected sample from each bullying role were assessed on measures for empathy, callous-unemotional (CU) traits, and affective instability (AI).

9.2.2. Sample

Stage 1:

3,883 pupils (aged 11-16 years) were invited to participate in a study about peer relationships, health, and emotions (Wolke et al., 2017). 2782 (71.6%) were screened for bullying involvement using self-reports and peer-nominations, for which a final sample of 2754 pupils had complete data (9.1% bullies, 23.9% victims, 14.6% bully-victims, and 52.4% uninvolved).

Based on the data for self-reported and peer-nominated bullying involvement, a total of 1088 pupils were selected for stage 2, and those who participated in both stages were entered into a prize draw to win a £50 voucher.

Stage 2:

Of the 1088 pupils selected, 276 (25.4%) were absent or could not take part due to organizational difficulties within schools (i.e., timetabling, computer access, exams). Twelve pupils were unable to participate due either to their school's concerns about vulnerability (*n*=5) or parent and/or child refusals (*n*=7), and a further seven were excluded (incorrect pupil attended, *n*=1; participant used for a pilot study, *n*=6). A total of 754 pupils were therefore assessed (53.6% female; 85.2% White British; $M_{\_age}$ 13.95 years, *SD*=1.34).

9.2.3. Measures

Peer bullying:

For self-reported bullying/victimisation, pupils completed the Bullying and Friendship Interview schedule (Wolke et al., 2000). The first 13 items provided behavioural descriptions of victimisation; e.g., “been hit or beaten up” or “been made to do things you didn't want to do”, and pupils were asked how frequently each behaviour had happened to them in the last six months. The same 13 items were adapted to assess bullying perpetration. Responses for all items were “never”, “sometimes”, “quite a lot” (several times a month) or “a lot” (at least once a week). Responses of “quite a lot” or “a lot” for at least one of the bullying perpetration or victimisation items identified self-reported bullies and victims, respectively (Solberg & Olweus, 2003; Wolke et al., 2001a; Woods & Wolke, 2004). Those identified as both bullies and victims were subsequently categorized as self-reported bully-victims.

For peer-nominated bullying involvement, pupils were given descriptions of bullying behaviours equivalent to those used for the self-report measure (e.g. Some people repeatedly leave people out of get-togethers, parties, trips or groups, get others to ignore people, or spread nasty lies, rumours or stories about people on purpose. Which people in your form/tutor do this?”). Participants were asked to nominate, from a numbered list, up to three students in their tutor/form group (broadly equivalent to the ‘homeroom’ in US schools) who were victims or perpetrators of the bullying behaviours described (de Bruyn et al., 2010; Juvonen et al., 2003). Pupils were identified as involved in bullying if their z-score (using the number of nominations received at the tutor group level) was more than one standard deviation above their tutor group’s mean (>1SD) for bullying, victimisation, or both (i.e., bully-victims).

Pupils were assigned to a final ‘bullying’ role (i.e., bully, victim, bully-victim, or uninvolved) and selected for stage 2 (see table 6.4 for selection rules).

Empathy:

Pupils completed the Interpersonal Reactivity Index (Davis & Association, 1980); a self-report questionnaire previously used within adolescent samples (Hawk et al., 2013;

Poteat & Espelage, 2005). Only the perspective taking (PT; e.g. “I try to look at everybody's side of a disagreement before I make a decision”) and empathic concern (EC; e.g. “I often have tender, concerned feelings for people less fortunate than me”) subscales were used as they closely correspond to the conceptual definition of cognitive and affective empathy, respectively (Davis & Association, 1980; Gini et al., 2007). Each subscale contained seven items for which pupils were asked to rate how much they agreed with each statement. Responses ranged from 0) not at all, to 4) extremely, and scores for each item were summed giving a total PT and EC score. A total empathy score was also calculated by combining scores from these subscales.

Cronbach’s Alpha for the total empathy scale was.79, with comparable reliability rates for the PT (α =.70) and EC (α =.67) subscales.

Callous-Unemotional (CU) Traits.:

The Inventory of Callous–Unemotional Traits (ICU; Frick, 2003) has been extensively used to measure callous-unemotional (CU) traits within adolescent populations (Ciucci & Baroncelli, 2014; Fanti et al., 2009). The ICU consists of three subscales, each containing eight items; for callous (e.g., “I do not care who I hurt to get what I want”), uncaring (e.g. “I feel bad or guilty when I do something wrong”; reverse scored), and unemotional traits (e.g. “I do not show my emotions to others”). Pupils were asked how much they agreed with each statement, with responses ranging from 0) not at all true, to 3) definitely true. Scores for each subscale were obtained by summing their corresponding eight items, from which a total score for CU-traits was calculated. Similar to previous studies (Muñoz et al., 2011), Cronbach’s Alpha for the total scale our sample was .79.

Affective Instability (AI):

No single scale exists for AI and therefore items were selected from three existing scales that corresponded to the definition proposed by Marwaha et al. (2014); “rapid oscillations of intense affect, with a difficulty in regulating these oscillations or their behavioural consequences” (pp.10). Six items were selected from the Affective Lability Scale (Harvey et al., 1989) to measure oscillation (variability) of affect; e.g. “One minute I can be feeling ok and then the next minute I’m tense, jittery and nervous”. For

intensity, six items from the Affective Intensity Measure (Larsen, 1984) were used; e.g. “When I’m happy, I feel like I’m bursting with joy”. Finally, regulation of affect was measured by six items from the Affective Control Scale (Williams et al., 1997); e.g., “When I am nervous I am afraid I will act stupid”. Items were selected based on how clearly they corresponded to the definition of AI, their suitability for use with adolescents, and previously reported factor loadings (Harvey et al., 1989; Larsen, 1984; Williams et al., 1997). Pupils were asked how much they agreed with each statement; from 0) strongly disagree, to 4) strongly agree. An affective instability score was calculated by summing responses across all 18 items. Good reliability has been reported for these scales individually; Cronbach’s Alpha .72 to .99 for ALS (Harvey et al., 1989), .90-.94 for AIM (Larsen, Diener, & Emmons, 1986) and .94 for ACS (Williams et al., 1997). The reliability of the combined affective instability scale in our sample was α=.84.

Demographic Data:

During stage 1, demographic information was obtained from pupils and schools. Pupils reported their gender, ethnicity, date of birth, and their parent’s highest level of education (i.e., 1-11 years; no education to basic schooling, and >11 years; further education, college or university). Ethnicity was dichotomised into ‘White British’ and ‘Other’ due to the low prevalence of individual ethnic groups for meaningful comparisons (e.g., ‘Asian’ was the next largest group at 6.1%). Schools provided data for attendance rate (%) and pupil premium status (yes/no). In the UK, pupil premium is extra funding that schools receive for disadvantaged pupils, including those who have been eligible (in the past six years) for free school meals. Pupil premium status for each pupil was obtained as an indicator of deprivation and/or financial assistance.

9.2.4. Procedure

Schools were contacted and invited onto the BASE study. Participating schools then received information sheets and consent forms for pupils and their parents. Written informed consent was obtained from all participants, for both stages of the study, and passive consent from parents was obtained via an ‘opt-out’ procedure. Thus pupils could only be assessed if they had provided written consent, and a refusal form had not

been returned by their parents. The online assessments for stages 1 and 2 were completed in groups of 20-30 pupils (approximately 50-60 minutes) during the school day. The online questionnaire was accessed via individual passwords and all measures were counterbalanced. At the start of each session, pupils received standardised instructions, and questionnaires were only completed when a researcher and a member of the school's staff was present. Data collection took place between October 2014 and July 2015, with approximately two months between stage 1 and stage 2. The study and all materials received full ethical approval from the university's ethics committee.

9.2.5. Analysis

Bivariate analyses (chi-square comparisons, one-way ANOVAs) were conducted on the demographic data to identify significant differences between the bullying groups. Those that varied significantly across groups were included as covariates, and thus controlled for in all analyses. Missing data was completely at random (MCAR), and bivariate analyses found no significant differences between pupils with complete or missing data with regards to bullying role, or any demographic variable. Participants with whole scales missing for any of the outcome variables were excluded from the analyses (n=27), along with participants with more than one missing item per subscale (n=16). Missing data for a single item on any subscale was replaced with the mean value for that subscale (stratified by gender). The data of a further two participants was excluded due to extreme scores (outliers). Analysis of covariance (ANCOVAs) and Bonferroni adjusted post-hoc comparisons were conducted to compare means between bullying roles (bullies, bully-victims, victims, and uninvolved). Due to reported differences between boys and girls with regards to involvement in bullying (Cook et al., 2010; Scheithauer et al., 2006), gender was included as a secondary factor, and interactions between gender and bullying role were investigated. A significance level of $p<.05$ was set for all analyses and effect sizes (partial eta squared) are reported. All analyses were computed using SPSS version 22.

9.3. Results

9.3.1. Descriptive Statistics

A final sample of 709 pupils (bullies=140, victims=161, bully-victims=247, and uninvolved=161) had complete data for all measures (table 9.1). Of the demographic data collected, only age ($F(3,705)=3.216$, $p=.022$) and pupil premium status ($\chi^2(3,709)=17.161$, $p=.001$) showed significant differences between the bullying roles, and were therefore included as covariates (thus controlled for) in the ANCOVA models.

Table 9.1 Individual characteristics of stage 2 participants (split by bullying role)

		Total	Bullies	Bully-Victims	Victims	Uninvolved
	***N* (%)**	709	140 (19.7)	247 (34.8)	161 (22.7)	161 (22.7)
Gender	*Girls*	381 (53.74)	76 (19.95)	123 (32.28)	98 (25.72)	84 (22.05)
	Boys	328 (46.26)	64 (19.51)	124 (37.80)	63 (19.21)	77 (23.48)
Age *	*Mean years*	13.94	14.14	14.05	13.73	13.82
	SD	1.35	1.40	1.26	1.38	1.39
Ethnicity	*White British*	605 (85.33)	111 (18.35)	214 (35.37)	142 (23.47)	138 (22.81)
	Other	104 (14.67)	29 (27.88)	33 (31.73)	19 (18.27)	23 (22.12)
Attendance	*Mean %*	95.41	95.47	95.34	94.90	95.97
	SD	4.67	4.54	4.42	5.59	4.13
Parent Ed *	*<=11 years*	102 (14.38)	21 (20.59)	36 (35.29)	25 (24.51)	20 (19.61)
	>11 years	607 (85.61)	119 (19.60)	211 (34.76)	136 (22.41)	141 (23.23)
PP *	*No*	552 (77.86)	108 (19.57)	175 (31.70)	127 (23.01)	142 (25.72)
	Yes	157 (22.14)	32 (20.38)	72 (45.86)	34 (21.66)	19 (12.10)

NOTE: * Parent Ed=Parent's Education, PP=Pupil Premium

9.3.2. The effects of bullying role and gender on empathy, CU traits, and affective instability

Empathy:

There was a small to moderate main effect of bullying role on total empathy ($F(3,699)=6.129$, $p<.001$, $\eta\rho^2=.026$). Gender also showed a moderate main effect ($F(1,699)=28.870$, $p<.001$, $\eta\rho^2=.040$), whereby girls ($M=35.05 \pm 8.22$) had significantly higher empathy scores than boys ($M=31.72 \pm 7.11$).

The perspective taking (PT) and empathic concern (EC) subscales of empathy were moderately correlated, $r(709)=.520$, $p<.001$, and total empathy showed strong and comparable associations with PT ($r(709)=.879$, $p<.001$), and EC ($r(709)=.864$, $p<.001$). ANCOVAs for the individual empathy subscales also showed small to moderate main effects of bullying role; PT ($F(3,699)=6.395$, $p<.001$, $\eta\rho^2=.027$), and EC ($F(3,699)=3.473$, $p=.016$, $\eta\rho^2=.015$). A small yet significant main effect was also found for gender on scores for PT ($F(1,699)=9.466$, $p=.002$, $\eta\rho^2=.013$), and EC ($F(1,699)=40.301$, $p<.001$, $\eta\rho^2=.055$). Again girls had significantly higher scores than boys for both the PT subscale ($M=16.23 \pm 4.70$ vs $M=14.97 \pm 4.52$), and the EC subscale ($M=18.83 \pm 4.62$ vs $M=16.75 \pm 3.86$).

No covariates included in the models, i.e., age and pupil premium, had a significant main effect on scores for the total scale or either subscale, and there were no significant interactions between bullying role and gender.

Callous-unemotional (CU) Traits:

There was a significant and moderate main effect of bullying role on scores for CU traits ($F(3,699)=11.903$, $p<.001$, $\eta\rho^2=.049$). Gender also showed a significant main effect ($F(1,699)=22.671$, $p<.001$, $\eta\rho^2=.031$), whereby boys scored higher for CU traits ($M=26.52 \pm 7.73$) than girls ($M=23.44 \pm 8.83$). There were no interactions between bullying role and gender.

Of the covariates included in the model, only pupil premium status had a significant yet small main effect ($F(1,699)=10.915$, $p=.001$, $\eta\rho^2=.015$), in which participants with pupil premium status were found to have higher levels of CU traits than those without (27.49 ± 8.06 vs 24.12 ± 8.44). There was no main effect of age on CU traits.

Affective Instability (AI):

For AI there were large and significant main effects found for bullying role ($F(3,699)=25.804$, $p<.001$, $\eta\rho^2=.100$), and gender $F(1,699)=55.918$, $p<.001$, $\eta\rho^2=.074$). For this measure, girls ($M=39.12 \pm 10.81$) had higher scores for AI than boys ($M=32.78 \pm 11.31$). Again there were no significant interactions between bulling role and gender.

The pupil premium covariate had a small but significant main effect ($F(1,699)=5.305$, $p=.022$, $\eta\rho^2=.008$), whereby those with pupil premium status scored significantly higher for AI (38.04 ± 12.43 vs 35.66 ± 11.15). Again there was no main effect found for age.

9.3.3. Differences between bullies, victims, bully-victims, and uninvolved adolescents

Table 9.2 shows the adjusted group means and the results of the Bonferroni post-hoc comparisons (results for the empathy subscales are shown in Appendix Q, table Q1). Mean differences between the bullying roles and the uninvolved group are shown in figure 9.1.

Table 9.2 Adjusted means and comparisons between bullying roles (Bonferroni adjusted) for empathy, callous-unemotional traits, and affective instability.

		Empathy			CU-Traits			AI		
Role	*N*	*M*	*SE*	*95% CI*	*M*	*SE*	*95% CI*	*M*	*SE*	*95% CI*
Bullies	140	32.81 [a b]	.65	31.54, 34.08	25.55 [b c]	.68	24.20, 26.89	33.05 [a]	.89	31.31, 34.79
Bully-victims	247	31.99 [b]	.49	31.04, 32.95	26.96 [c]	.52	25.95, 27.97	37.74 [b]	.67	36.43, 39.05
Victims	161	34.31 [a]	.62	33.10, 35.53	24.35 [a b]	.65	23.07, 25.63	40.47 [b]	.85	38.81, 42.13
Uninvolved	161	35.05 [a]	.61	33.86, 36.24	22.13 [a]	.64	20.87, 23.38	31.33 [a]	.83	29.70, 32.96

NOTE: Total *N*=709. Abbreviations: CU-Traits=Callous-Unemotional Traits, AI=Affective Instability, SE=standard error, *95% CI* = 95% confidence intervals (adjusted for the inclusion of age and pupil premium status as covariates)

Means within columns that do not share a subscript ([a b c]) were statistically significantly different between roles in a Bonferroni post-hoc comparison test ($p<.05$). E.g. for Empathy, the mean score for bully-victims ([b]) significantly differed to the victim and uninvolved groups (both [a]).

Bully-victims had the lowest scores for empathy overall, and separately for the PT and EC subscales. For total empathy, these scores were significantly lower than victims (p=0.20) and the uninvolved group (p=.001). For PT, bully-victims were also significantly different to victims (14.69 $\pm$ 5.08 vs 16.57 $\pm$ 4.32, p=.002) and uninvolved pupils (14.69 $\pm$ 5.08 vs 16.48 $\pm$ 4.27, p=.002). For the EC subscale, bully-victims scored only significantly lower than uninvolved pupils (17.21 $\pm$ 4.67 vs 18.79 $\pm$ 3.84, p=.011). There were no significant differences between bullies, victims, and those uninvolved in their scores for total empathy, PT or EC.

Bully-victims had the highest scores for CU traits, closely followed by bullies. Bonferroni post-hoc comparisons revealed that bully-victims again showed significant differences to victims (p=.011) and the uninvolved group (p<.001), and the scores of bullies and uninvolved pupils also showed significant differences (p=.002).

Victims showed the highest levels of AI, followed by bully-victims, and both showed significant differences to the non-victimised groups, i.e., bullies and uninvolved (both p<.001). There were no significant differences in AI between victims, and bully-victims, or between bullies and those uninvolved.

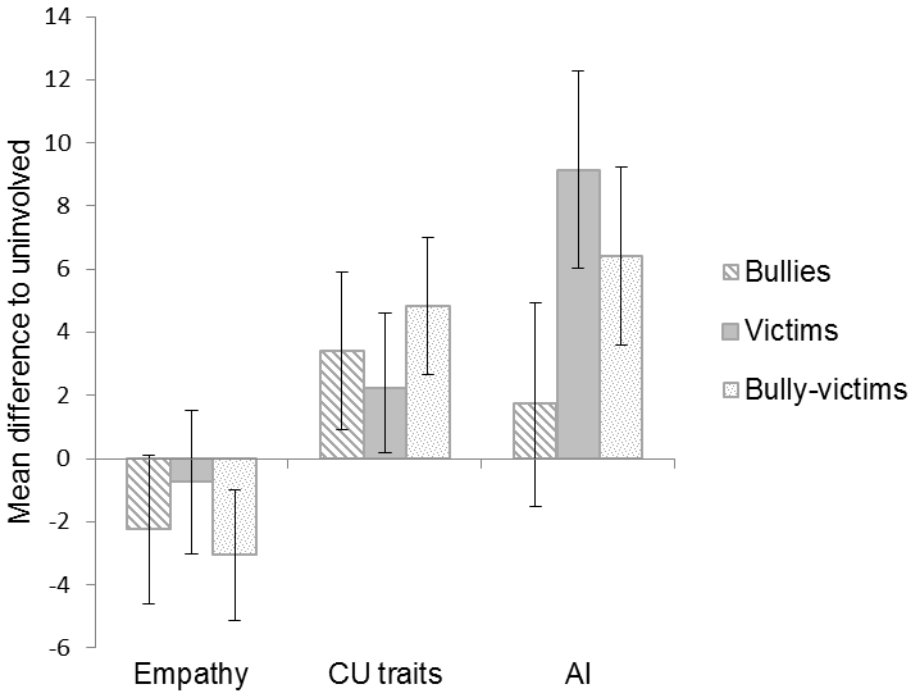

Figure 9.1 Mean differences between bullying roles (with 95% confidence intervals) and uninvolved participants (represented at the horizontal 0 line)

9.4. Discussion

Compared to uninvolved adolescents, all roles involved in bullying had higher scores for callous-unemotional traits and affective instability, and lower scores for empathy. Perpetrators (i.e., bullies and bully-victims) were significantly higher in callous-unemotional traits than those uninvolved, whereas those who were victimised (i.e., victims and bully-victims) had significantly higher levels of affective instability than non-victimised adolescents. Bully-victims also showed less empathy than victims and uninvolved adolescents.

The high levels of affective instability found for victims provides support for associations previously reported between victimisation and emotional dysregulation (Frizzo et al., 2013; Rosen et al., 2012). Higher levels of instability may make adolescents more

vulnerable to being targeted by peers. Similarly, being victimised could lead to elevated levels of affective instability and add to the risk of continued or increased victimisation (Rosen et al., 2012). Bully-victims also showed higher levels of affective instability than bullies and uninvolved pupils, and this may be shown through this group's more impulsive nature and reactive style of aggression (Salmivalli & Nieminen, 2002; Schwartz, 2000). Increased levels of unstable affective traits could account, in part, for this group's tendency to lash out against others, perhaps in retaliation to their own victimisation (Arseneault et al., 2010; Salmivalli & Nieminen, 2002). Bullies were lower in AI than victims and bully-victims, and showed levels comparable to those of uninvolved adolescents. This attribute may be reflected in the bully's often controlled and strategic use of aggression (Pouwels et al., 2016), and could also highlight a prominent emotional distinction between bullies and the more reactive bully-victims.

Our finding that bullies had higher CU traits than those uninvolved supports associations previously reported (Ciucci & Baroncelli, 2014; Fanti et al., 2009). This finding also extended to the bully-victim group, and suggests that CU traits may be a key characteristic of adolescents who perpetrate bullying (Muñoz et al., 2011). It was expected that bullies and bully-victims would be significantly higher in CU traits than victims, however this was not found. Victims did show more CU traits than uninvolved pupils, but this difference just failed to reach significance. One reason for the slightly elevated CU traits found for victims was proposed by Zych et al. (2017), who suggested that the unemotional component may describe a 'neutralization technique' used by victims to cope with their suffering at the hand of bullies. However further research on the associations between CU traits and victimisation is needed.

Bully-victims not only displayed significantly higher levels of CU traits than those not involved, but also lower levels of empathy than victims and the uninvolved group. This combination shows support for the inverse relationship suggested between CU traits and empathy (Muñoz et al., 2011; Zych et al., 2017), and may explain how, despite their own experience of victimisation, bully-victims continue to harm others. This group may target innocent peers as a form of retaliation or displaced aggression (Reijntjes, Kamphuis, Thomaes, Bushman, & Telch, 2013a; Reijntjes et al., 2010). However these forms of aggression are often unsuccessful in gaining dominance, and can lead to further ostracism or victimisation by peers (Olthof et al., 2011).

Bullies did not differ to any other group in their ability for empathy, and this was consistent across the cognitive and affective dimensions. Although we cannot conclude that this group are deficient in this aspect of emotional processing, this finding does not support claims that bullies may show superior cognitive skills or understanding of others (Sutton et al., 1999a). The bully's ability to strategically manipulate others may not depend on superior social cognition in relation to empathy, but instead reflect the use of skills for more antisocial or Machiavellian behaviours (Arefi, 2010; Lonigro, Laghi, Baiocco, & Baumgartner, 2014). Bullying interventions that are targeted towards increasing empathy may therefore be ineffective for many bullies.

Our findings suggest clear differences in the emotional attributes associated with bullying and victimisation in adolescence. Bullying perpetration is likely characterised by a callous lack of care for others, whereas victimisation may be associated with a style of affect that is less stable and more poorly controlled. Bully-victims appear to display a unique combination of attributes; with elevated levels of both affective instability and callous-unemotional traits, and a reduced ability for empathy. This profile may account for their dual experience as both a victim and a perpetrator of bullying, and the relatively high stability of bully-victim status from childhood to adolescence (Hanish & Guerra, 2004).

Surprisingly there were no interactions found between bullying role and gender, despite reported differences between boys and girls in relation to bullying involvement (Cook et al., 2010). Our findings are consistent with previously reported gender differences; namely higher levels of CU traits found in boys (Essau, Sasagawa, & Frick, 2006; Viding et al., 2009), and higher levels of empathy in girls (Hawk et al., 2013; Van der Graaff et al., 2014). An increased ability for empathy may be shown in the more relational forms of bullying often used by girls (Card, Stucky, Sawalani, & Little, 2008). Relational (or indirect) bullying often relies on effective manipulation of peers and thus requires a relatively good understanding of the thoughts/feeling states of others. In Western cultures, girls are often stereotyped as 'emotional'(Fischer, 1993). However pre-adolescent boys have been reported to show more expression of (negative) emotions than girls, and have poorer emotional regulation (Hanish & Guerra, 2004). No gender differences have been reported with regards to affective instability, although girls in our study showed higher levels of AI than boys. Further investigation is warranted before drawing strong conclusions from this finding.

Empathy and callous-unemotional traits have been suggested as features of bullying perpetration, yet research has rarely assessed bully-victims on these attributes of emotion. This study drew direct comparisons between the groups involved in bullying and highlighted the ways in which bully-victims show similarities, and differences, to both bullies and victims. The screening assessment conducted at stage 1 resulted in the identification of a large number of adolescents involved in bullying to be assessed in stage 2, and thus provided sufficient statistical power for comparisons to be made. To our knowledge, this is the first study to investigate affective instability in relation to bullying and victimisation. Although victimisation has been investigated with regards to some aspects of emotionality, i.e., temperament and emotion regulation (Frizzo et al., 2013; Mahady Wilton et al., 2000; Rosen et al., 2012), the variability of intense affect represented by affective instability may also show important associations with victimisation. Moreover, victims are at increased risk for later internalising disorders, i.e., depression (Zwierzynska et al., 2013), for which affective instability is a prominent symptom.

There are also limitations. Firstly, this study is cross-sectional and despite showing socio-economic and cultural diversity, the schools or pupils involved may not be representative of the UK as a whole. Moreover, the associations found between groups and the emotional attributes measured were correlational in nature, and thus causation cannot be inferred. Some longitudinal research is beginning to emerge (Stavrinides, Georgiou, & Theofanous, 2010) suggesting a reciprocal relationship between bullying and empathy. However, further longitudinal studies are needed. Finally, this study relied on self-report measures and therefore biases may arise from pupils' self-perceptions, or avoiding 'undesirable' responses. However the use of self-report scales, namely for empathy and CU traits, has been widely validated in existing research (Hawk et al., 2013; Kimonis et al., 2008b).

In conclusion, adolescent bullies, victims, and bully-victims display a distinct profile of emotional traits and attributes. Those who bully are more callous, uncaring, and lack empathy for others. This 'cool' style of cognition may be rewarding for the school bully, which may ultimately augment and sustain their bullying behaviour. On the other hand, those who are victimised are associated with less emotional stability and control. The increased levels of affective instability reported for adolescent victims and bully-victims may be a risk factor for becoming targets of bullying, or further strengthen these roles.

Bully-victims not only show high rates of emotional instability, but are also callous and lack empathy. This combination of traits may explain their dual role as perpetrator and victim, and highlights the importance of future research to assess bully-victims as an independent and distinct group. These emotional attributes may help to identify adolescents who are vulnerable for involvement in bullying, as well as identify those already involved. Interventions that focus on empathy as a way to reduce bullying may be ineffective for many bullies. Thus, in addition to addressing the unempathic and uncaring nature of perpetrators, interventions could also identify ways to help victimised adolescents attend to and regulate their emotional responses.

CHAPTER TEN – Combining Social Information and Affective Processing

In chapter four, it was highlighted that a potential limitation of the Social Information Processing (SIP) Model is the lack of consideration and integration of affective processes (Lemerise & Arsenio, 2000). Studies two and three addressed how adolescents involved in bullying may differ with regards to abilities or deficiencies in the early stages of SIP (i.e., encoding and interpretation), and in emotional traits or attributes (i.e., empathy, callous-unemotional (CU) traits, and affective instability). In this brief chapter, the associations between emotion measures and the early stages of encoding and interpretation are investigated. Following from the recommendation of Lemerise and Arsenio (2000), an integrated model was proposed for the influence of these emotional processes on the early stages of SIP (figure 10.1.).

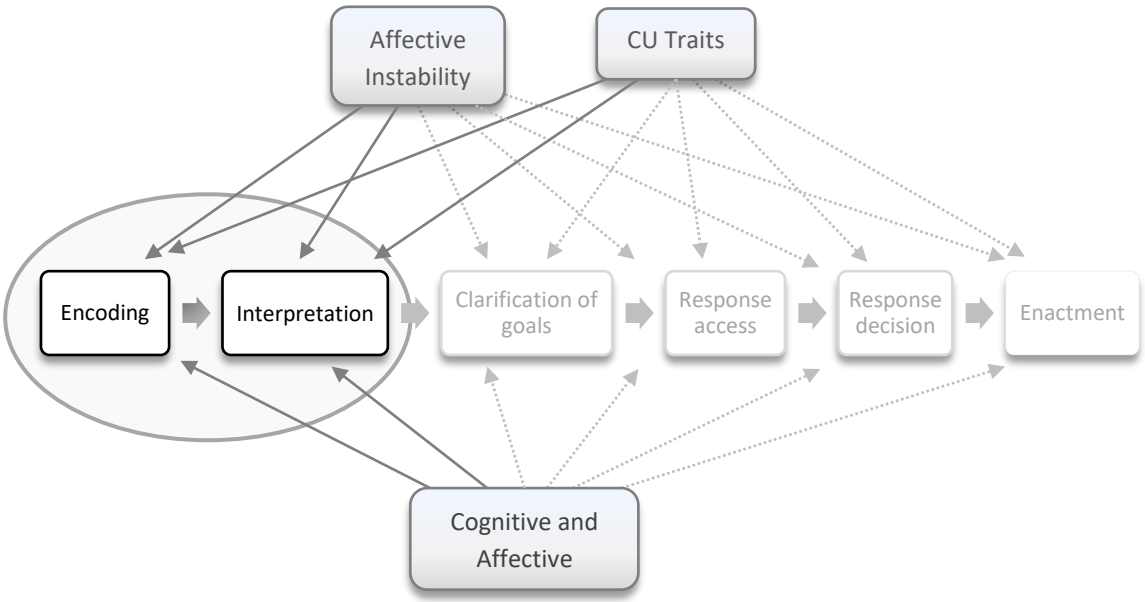

Figure 10.1. An integrated model of early social information processing (encoding and interpretation), and the influence of emotion.

The aim of this chapter is to combine the findings from these studies to identify associations between the SIP and emotion measures, and explore the influence these emotional attributes may have on the early stages of SIP.

10.1. Correlations between SIP and emotion measures

Partial correlations were conducted to investigate associations between each SIP measure from study two and each emotion measure from study three, whilst controlling for the effects of the other emotion measures (table 10.1).

Table 10.1 Partial correlations between Social Information Processing and emotion measures from studies 2 and 3

	Social Information Processing Measures		
	Encoding	Interpretation	
Emotion Measures	Emotion Recognition	Hostile Attributions	Characterological Self-blame
Affective Empathy	-.027	.068	-.012
Cognitive Empathy	-.100**	.017	-.038
Callous-Unemotional Traits	-.113**	.062	.091*
Affective Instability	.084*	.033	.219***

NOTE: *df*=698, significance at $^{*}p<.05$, $^{**}p<.01$, $^{***}p<.001$.

Encoding:

Cognitive empathy had a weak but significant negative correlation with emotion recognition ($r(698)=-.100$, $p=.027$). A negative association was also found between

emotion recognition and CU traits (r(698)=-.113, p=.003), whereas a positive relationship was found for affective instability (r(698)=.084, p=.027). These findings suggest that adolescents who showed higher levels of cognitive empathy, and CU traits were poorer at the emotion recognition task, whilst participants with higher affective instability performed better.

Interpretation:

There were no significant correlations found between hostile attribution bias and any emotion measure. However characterological self-blame attributions showed a significant positive, but weak, relationship with CU traits (r(698)=.091, p=.016), and a moderate association was found with affective instability (r(698)=.219, p<.001). Thus, adolescents with higher levels of CU traits or affective instability had a greater tendency for selecting characterological self-blame attributions in response to the social situation vignettes.

The significant correlations between the SIP and emotion measures are shown in figure 10.1 below. Because there were no significant findings for hostile attribution bias, the interpretation stage in this figure represents characterological self-blame only.

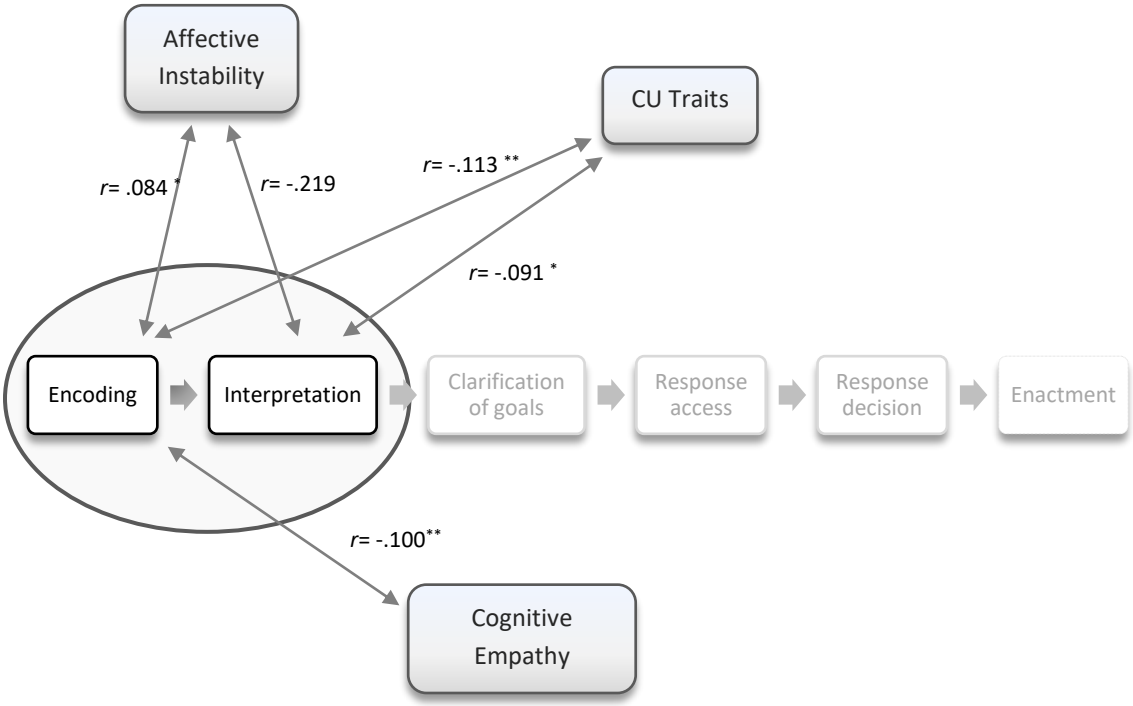

Figure 10.2. Significant associations between the early SIP and emotional attributes

10.2. The contribution of emotional attributes in predicting abilities for early SIP

Next, multiple linear regression models were computed to investigate the influence of empathy, CU traits, and affective instability in predicting each early SIP measure. These emotional attributes were included in step 1 of the models and in step 2 (adjusted models), control variables from studies two and three (i.e., gender, age in years, ethnicity, attendance, pupil premium status and parent education) were simultaneously entered.

The adjusted models are displayed in table 10.2, and the main findings are reported below.

Table 10.2. Adjusted regression models (including 95% confidence intervals) for each SIP measure, controlling for individual characteristics.

	Emotion Recognition			Hostile Attributions			Characterological Self-blame		
	B	95% CI		*B*	95% CI		*B*	95% CI	
		Lower	Upper		Lower	Upper		Lower	Upper
Affective	-.005	-.034	.025	.026	-.011	.063	.006	-.022	.034
Cognitive	-.031*	-.055	-.007	.003	-.027	.034	-.011	-.034	.011
CU Traits	-.020**	-.035	-.005	.015	-.004	.033	.019**	.005	.033
AI	.006	-.003	.014	.005	-.006	.016	.021***	.013	.030
Gender [a]	.133	-.070	.336	-.477***	-.729	-.226	.041	-.148	.230
Age	.035	-.036	.105	-.369***	-.457	-.282	.012	-.053	.078
Ethnicity	.094	-.176	.365	.063	-.271	.398	.229	-.022	.481
Attendance	-.013	-.034	.007	-.044 **	-.069	-.018	.016	-.003	.035
PP	-.083	-.314	.148	.064	-.222	.350	.046	-.169	.261
Parent Ed	-.130	-.399	.139	-.366*	-.700	-.033	.061	-.190	.311
R^2	.029			.136			.071		
F	1.975*			10.415***			5.068***		

Abbreviations: Affective; affective empathy, Cognitive; cognitive empathy, CU traits; callous-unemotional traits; AI; affective instability, PP; pupil premium status, Parent Ed; parent's highest level of education.

[a] Male was used as the reference category in all models

Significance at $^{*}p<.05$, $^{**}p<.01$, $^{***}p<.001$.

Higher scores for emotion recognition were significantly predicted by having lower cognitive empathy (*B*=-.031, 95% CI=-.055,-.007, *p*=.012), and also lower levels of CU traits (*B*=-.020, 95% CI=-.035,-.005, *p*=.003). However no significant contribution was made by affective instability, affective empathy, or any of the demographic variables.

None of the emotion measures made a significant contribution in predicting hostile attribution bias. However gender; i.e., being female (*B*=-.477, 95% CI=-.729,-.226, *p*=<.001), lower parent's education; i.e., ≤11 years (*B*=-.366, 95% CI=-.700,-.033, *p*=.033), lower age (*B*=-.369, 95% CI=-.467,-.282, *p*<.001) and lower attendance at school (*B*=-.044, 95% CI=-.069,-.018, *p*=.001), all predicted a higher level of hostile attribution biases.

Finally, higher levels of CU traits (*B*=.019, 95% CI=.005,.033, *p*=.009) and affective instability (*B*=.021, 95% CI=.013,.030, *p*<.001) predicted higher characterological self-blame. There were no significant contributions made by either cognitive or affective empathy, or any of the demographic control variables included in the model.

10.3. Discussion of findings

These findings show some support for an association between emotional processes and early SIP, however the reported associations were weak across the measures. Lower cognitive empathy and CU traits were related to poorer emotion recognition (encoding), whereas higher levels of CU traits and affective instability were associated with a greater bias for characterological self-blame (interpretation). There were no significant relationships between any of the emotion measures and hostile attribution bias, despite this being one of the most recognised interpretation biases relating to SIP and aggressive behaviour (De Castro et al., 2002).

Across studies two and three, adolescents with higher levels of CU traits and cognitive empathy were found to have a lower ability for accurately recognising the emotions of others. These findings are somewhat unexpected, particularly with regards to cognitive empathy, which is often described as an ability for recognising the thoughts and feelings of others (Davis, 1994; Gini et al., 2007). This finding also contradicts previous

reports that higher levels of empathy would be most likely to predict a better ability for emotion recognition (Konrath, Corneille, Bushman, & Luminet, 2014; Riggio, Tucker, & Coffaro, 1989), and therefore reflect a greater accuracy for encoding social information.

Based on findings relating to psychopathy and conduct problems, a relationship may exist between CU traits and a deficit for emotion recognition (Dadds et al., 2012; Woodworth & Waschbusch, 2008). Indeed adolescents with antisocial behaviour problems have been reported to process emotional stimuli differently than other adolescents (Loney, Frick, Clements, Ellis, & Kerlin, 2003). Having an interpersonal callous style has been described as being remorseless, manipulative, but also selfish (Pardini, Obradovic, & Loeber, 2006), and this is shown in the ability (and willingness) of these individuals to use others for their own personal gain. Those who are highly callous are often also highly ego-centric and self-focussed (Frick & Ellis, 1999), and this may inhibit attention to the emotional states of others.

However, with regards to bullying, the ability to manipulate social relationships may depend on the skills of the perpetrator in identifying the emotional weaknesses of their victim (Arsenio & Lemerise, 2001). Indeed the strategic and manipulative 'ring leader' bullies in study three had high levels of CU traits, however this group showed no deficit for emotion recognition. Similarly bully-victims, who showed the most deficits across the SIP and emotion measures, did not differ from other adolescents in their ability for emotion recognition, despite having the highest levels of CU traits. Thus, whilst it may be true that CU traits may overall predict a slight deficit in the processing of social and emotional cues, this was not evident in the bullying subgroups.

Affective instability showed a weak association with emotion recognition, whereby adolescents with higher levels of affective instability, had higher scores for emotion recognition. However, in the regression models including potential confounders, affective instability no longer significantly predicted emotion recognition ability. Although the relationship between affective instability and emotion recognition have not been directly investigated, a deficit for recognising facial expressions has been associated with borderline personality disorder (BPD) (Daros, Zakzanis, & Ruocco, 2013; Domes, Schulze, & Herpertz, 2009), for which affective instability is a core symptom. However this deficit may be a result of other traits and symptoms associated with BPD, rather than affective instability specifically, and indeed others have reported that patients with

BPD are characterised by a heightened sensitivity to emotional stimuli (Lynch et al., 2006; Schulze, Domes, Köppen, & Herpertz, 2013). Thus, it is unclear if affective instability is associated with abilities or deficiencies with emotion recognition.

The negative associations found between emotion recognition and both cognitive empathy and CU traits, may be partly attributable to the affective nature of the stimuli used to assess encoding. Emotion recognition has been proposed as an attribute pertaining to emotional intelligence (Ciarrochi, Chan, & Bajgar, 2001; Elfenbein, Marsh, & Ambady, 2002; Petrides & Furnham, 2003), and may therefore rely on skills that are independent of an individual's social cognition or skills for SIP. The ability to accurately identify the emotions of others may also be influenced by an individual's own affective experiences (Pollak & Sinha, 2002), and in this way could be considered a subjective process. Emotion recognition may therefore also be addressing the interpretation stage of SIP, and not purely how accurately this information is encoded. It has also been noted that those high in CU traits show impairments in recognising emotions from facial expressions (Gillespie, Rotshtein, Wells, Beech, & Mitchell, 2015; Prado, Treeby, & Crowe, 2015), and particularly from the eye regions of faces (Dadds, El Masry, Wimalaweera, & Guastella, 2008; Dadds et al., 2006). Therefore, the poorer emotion recognition ability shown by those high in CU traits may partly be accounted for by the EYES task used in this study.

There were no significant associations found between hostile attribution bias and any of the emotional attributes measured. These hostile biases can reflect an automatic (or pre-emptive) style of processing, and are more commonly associated with more reactive and impulsive forms of aggressive behaviour (Chen, Coccaro, & Jacobson, 2012; Crick & Dodge, 1996). Lemerise and Arsenio (2000) proposed that a combination of high emotionality and poor emotion regulation can lead to poor social functioning. More specifically, the intensity with which emotions are experienced and how they are regulated can influence how social situations are interpreted. Thus, it may be reasonable to expect that affective instability, as a trait encompassing high emotional reactivity, intensity, and instability, may be associated with hostile attribution biases. However this was not shown in the findings reported here.

CU traits have been associated with negative interpretation biases, including a tendency to interpret the world as a 'hostile place' (Cima, Vancleef, Lobbestael,

Meesters, & Korebrits, 2014), however this association has not been explored further, and was not supported by the studies in this thesis. It is likely that hostile attribution biases may largely be a product of an individual's own experiences of hostility (Dodge, 2006) or expectations of others (Dodge, 2006; Schwartz et al., 1998). The finding that adolescents who were female, younger, and those with lower school attendance rates and parents with less education, suggests that hostile attribution biases may also be accounted for by other individual and situational characteristics; rather than specifically the influence of emotional attributes.

Both affective instability and CU traits however showed significant associations with characterological self-blame. Adolescents who had higher levels of affective instability or CU traits more often endorsed this type of self-blame attribution. Affective instability is characterised by rapid fluctuations in mood, and most typically between intense states of positive and negative affect (Thompson et al., 2011). Characterological self-blame attributions are elicited in response to predominantly negative events, to which those high in affective instability may have increased emotional sensitivity and reactivity (Carpenter & Trull, 2013). This instability may therefore manifest itself in a bias for favouring the negative and self-deprecating beliefs that are indicative of characterological self-blame (Gladstone & Kaslow, 1995). Moreover, self-blame is also a common feature of depression and anxiety disorders (Anderson & Arnoult, 1985; Anderson & Riger, 1991), for which affective instability is a common symptom (Farmer & Kashdan, 2014; Thompson et al., 2011).

The positive relationship found between CU traits and characterological self-blame however is surprising. CU traits are associated with psychopathy, which is associated with a lack of responsibility or acceptance of blame (Hare & Neumann, 2008; Kimonis, Hall, & Venables, 2015). It may therefore be assumed that CU traits would predict lower characterological self-blame. However the opposite was found across studies two and three. One possibility may be that the egocentric and self-focussed personality style associated with CU traits (Frick & Ellis, 1999) could be reflected in a similarly self-focussed attribution style; however there are no existing findings to support this.

10.4. Summary and Conclusions

The associations reported here between measures of social information processing and affective processing, expand upon previous recommendations for an integration of emotional processes within the SIP model (Arsenio & Lemerise, 2001; Lemerise & Arsenio, 2000). Most of the emotional attributes assessed showed some influence on abilities/deficiencies in the early stages of SIP, but the associations were generally weak. Those who were less empathic and had lower levels of callous-unemotional traits were better at encoding social information; whereas those with higher levels of affective instability or callous-unemotional traits showed interpretation biases in the form of increased characterological self-blame.

There has been little investigation of how a combination of social information and affective processes can influence behaviour, and therefore few findings exist that either support or dispute the associations reported here. Further research is needed, and should extend to influences on the later stages of SIP. For example, affective instability may inhibit competent response access, resulting in increased 'pre-emptive-processing' (Crick & Dodge, 1994). A reduced ability for affective empathy may influence the clarification of goals and subsequent response selection, through a lack of sympathy or concern about the consequences for others (Arsenio & Lemerise, 2001; Gini et al., 2007). Finally, CU traits may distort individuals' concept of what is right or wrong, or simply allow them not to care about what is right or wrong (Pardini & Byrd, 2012). Thus, these could influence the evaluation of goals within social situations, and the responses selected in pursuit of these goals. Other aspects or attributes of emotion may influence SIP; such as emotional sensitivity or arousal, and the influence that these attributes have either directly on behaviour (i.e., bullying) or through their interplay with social information processing, should also be considered.

CHAPTER ELEVEN – General Discussion

This chapter will provide an overview of the findings from the three studies undertaken and highlight the strengths and limitations of these studies. Finally, the implications of the findings will be discussed, along with suggestions for future directions.

This thesis aimed to explore the social and emotional profiles of adolescent bullies, bully-victims, and victims, by identifying differences in attributes between these roles and compared with those uninvolved in bullying. The specific research aims were as follows:

1. To identify how those involved in bullying (bullies, bully-victims, victims) and those uninvolved compare with regards to sociometric status within the peer group (i.e., social impact, social acceptance, and perceived popularity).
2. To identify whether bullying and/or victimisation is associated with deficiencies with encoding and interpreting social information. More specifically to investigate differences between the groups (bullies, bully-victims, victims, and uninvolved) in abilities at these early stages of social information processing.
3. To explore differences and similarities between the groups on aspects of emotional functioning, namely emotional traits and attributes (i.e., empathy, callous-unemotional traits, and affective instability).

The perpetrators of bullying, both bullies and bully-victims, were the primary focus of these studies; to investigate whether bullies are as socially and emotionally inept as they are often portrayed, and how bully-victims can be distinguished from the pure bully and victim groups.

11.1. Summary of results

The main findings extracted across the three studies are highlighted below:

11.1.1. Comparisons between adolescent bullies, victims, and bully-victims on perceived popularity, social impact, and acceptance (study 1).

- Involvement in bullying in any role (bully, victim, or bully-victim) was associated with higher social impact compared to uninvolved adolescents.
- Bully-victims were lower in social acceptance (were less liked) than all other groups, including bullies.
- Bullies on the other hand were perceived to be more popular than victimised (victims and bully-victims) and uninvolved adolescents.
- Involvement in bullying made the largest contribution in predicting sociometric status, over and above other individual (e.g., age, ethnicity) and behavioural (e.g., prosocial behaviour, conduct problems) characteristics.
- There was low self-reporting of bullying perpetration, and most bullies self-identified as victims. Using a mixture of self-reports and peer-nominations allowed for more bullies to be identified and retained the statistical power of group comparisons.

11.1.2. Differences in the Early Stages of Social Information Processing for Adolescents Involved in Bullying (study 2).

- Bullies did not differ to any group, including uninvolved adolescents, on the early encoding and interpretation stages of social information processing. However, those who were victimised (victims and bully-victims) showed the most biases in their interpretation of social information.
- Bully-victims displayed biases for endorsing hostile attributions of intent and characterological self-blame attributions for ambiguous social events.
- Victims had an increased bias for endorsing characterological self-blame attributions compared to non-victims (bullies and uninvolved).

11.1.3. Bullying in adolescence: how do emotional traits distinguish those involved? (study 3).

- Perpetrators of bullying (bullies and bully-victims) displayed higher levels of callous-unemotional traits than those uninvolved.

- Victims of bullying (victims and bully-victims) had increased levels of affective instability compared to those uninvolved.
- Bully-victims showed the most differences across the emotional measures when compared to the uninvolved group. Not only did they have more callous-unemotional traits and more affective instability, but also lower levels of empathy.

Across the three studies, a distinct profile of social and emotional attributes can be constructed for bullies, victims, and bully-victims. This is shown in table 10.1 below.

Table 11.1 The social and emotional attributes found for bullies, victims, and bully-victims across the studies

Bullies	Bully-victims	Victims
High Social Impact	High Social Impact	High Social Impact
High Perceived Popularity	-	-
-	Low Acceptance	-
-	Hostile Attribution Biases	-
-	Self-blaming Attributions	Self-blaming Attributions
-	Low Empathy	-
Callous-unemotional Traits	Callous-unemotional Traits	-
-	Affective Instability	Affective Instability

NOTE: - denotes no significant differences to the uninvolved group.

11.1.4. The Bullies

Bullies were the most popular group as perceived by their peers; this was particularly true for male bullies, who had increased popularity compared to female bullies. With regards to acceptance by the peer group, bullies had similar levels of social acceptance to uninvolved adolescents. Bullies showed no deficits with emotion recognition or biases in their interpretations of social information; thus indicating a relatively competent ability for encoding and interpreting social information. With regards to emotional traits and attributes, bullies displayed a more stable style of affect than victims, and did not differ to the uninvolved group in their levels of affective instability or empathy. However one emotional attribute that did distinguish bullies from those uninvolved was their higher levels of callous-unemotional traits.

11.1.5. The Bully-victims

Bully-victims shared a number of emotional and social attributes with both bullies and victims, however a distinct profile for this group was seen across the studies. Bully-victims had a high level of social impact within the peer group although they were the least socially accepted of all the groups, including the pure bullies themselves. Moreover, bully-victim status predicted low levels of perceived popularity. Gender differences were seen, whereby female bully-victims were more socially accepted and perceived as more popular than male bully-victims. Bully-victims also showed the most biases in their interpretations of social situations; attributing more hostile intent to others' behaviours, in addition to favouring attributions of characterological self-blame. Across the emotional traits and attributes measured, bully-victims were found to deviate the most from those uninvolved. This group had low levels of empathy (both cognitive and affective), the highest levels of callous-unemotional traits, and displayed high levels of affective instability.

11.1.6. The Victims

Although victims had higher social impact than uninvolved adolescents, being a victim was found to predict low levels of social acceptance and perceived popularity. Male victims were higher in acceptance, and thus more liked by their peers than female

victims. With regards to social information processing, victims showed biases in their interpretations of social information. Specifically, victims had a tendency to endorse characterological self-blame attributions; i.e., more often attributing the causes of social events to stable, uncontrollable, and negative aspects of their character. Furthermore, both male and female victims displayed a more unstable style of affect compared to the non-victim groups.

11.2. Integrative Discussion

In the extant literature, there are contradicting claims regarding the social and emotional abilities of bullies. Historically this group have been portrayed as having a poor understanding of people and situations, a lack of compassion for others, and a reduced ability for regulating their emotions or behaviour (Crick & Dodge, 1996; Garner & Hinton, 2010; Gini et al., 2007; Randall, 1997; van Noorden et al., 2015). Whilst this may hold some truth with regards to aggression and bullying perpetration in general, the studies in this thesis suggest these attributes may be more representative of bully-victims than of pure bullies.

The differences reported across these studies with regards to bullies and bully-victims show support for resource control theories of aggression and bullying. Adolescent bullies represent the effective aggressors who use a combination of coercive and prosocial strategies to acquire a dominant position within the peer group (Hawley, 2003, 2014; Olthof et al., 2011). The ability of bullies to successfully adopt this bi-strategic approach may reflect the competencies shown by this group for both affective and social information processing. Across studies two and three, bullies displayed an accurate understanding of people and situations, and compared to victimised adolescents, showed a relatively stable and controlled style of affect. Thus bullies' use of prosocial and antisocial strategies, along with their competent social skills, may largely account for their social dominance, and specifically the high popularity found for this group in study one (Hawley, 2003; Rodkin et al., 2015). Bullies in this study were no different in social acceptance to those uninvolved, and they were not as disliked as their victimised peers. This supports claims that bullies often have a controversial status within the peer group in being liked by some but disliked by others (Farmer et al., 2010; Salmivalli et al., 1996; Wolke et al., 2001b), and overall have a rather 'average'

level of acceptance (Reijntjes et al., 2013b). The increased priority placed on popularity over acceptance during adolescence, emphasises the social rewards received by bullies; and this control/influence over resources and peers may be a fundamental motivation underlying bullying in adolescence, and may also explain the increase in bullying perpetration found during this period (Pellegrini & Long, 2002; Salmivalli & Peets, 2009; Scheithauer et al., 2006; Sijtsema et al., 2009).

Adolescent bully-victims, on the other hand, do not experience the same social rewards from their bullying of others (Olthof et al., 2011). This group represent the reactive and maladjusted individuals who adopt ineffective strategies and are unsuccessful in their pursuit of dominance and control (Hawley, Stump, & Ratliff, 2011). Across studies two and three, bully-victims exhibited the most 'deficiencies'; showing biases in their interpretations of social information, a lack of empathy, and unstable/dysregulated emotional traits. These attributes may underlie the typically impulsive and reactive aggression perpetrated by this group (Haynie et al., 2001; Schwartz et al., 2001; Toblin et al., 2005), and may also explain their lack of success in acquiring a dominant position within the peer group (Schwartz, 2000). However Olthof et al. (2011) reported that bully-victims were behaviourally similar to 'ring-leader' bullies in initiating acts of bullying and being bi-strategic. Both bullies and bully-victims displayed high levels of CU traits in study three, and these traits are not only associated with more strategic and predatory forms of aggression (Frick, Kimonis, Dandreaux, & Farell, 2003b), but also more often found in those who use a combination of proactive and reactive aggression (Fanti et al., 2009; Frick et al., 2003a). Possibly bully-victims are as strategic as bullies, however their dysregulated emotional and behavioural style causes these adolescents to be less effective in their use of aggression (Olthof et al., 2011).

Alternative theories of aggression may be relevant to the development of bully-victim status. Social-cognitive theory has been widely used to explain differences between proactive and reactive aggression (Card & Little, 2007), and how the interplay of social, emotional, and cognitive processes can guide behaviour (Crick & Dodge, 1994; Ettekal, Kochenderfer-Ladd, & Ladd, 2015; Lemerise & Arsenio, 2000). In support of this, studies two and three suggest a distinct profile of emotional attributes and interpretation biases associated with bully-victims. The deficiencies shown by bully-victims in their affective and social information processing can provide some explanation of how their dual role as perpetrator and victim is developed and sustained; and may ultimately

contribute toward the unique outcomes reported for this group (Cook et al., 2010; Veenstra et al., 2005). This deficit approach to bullying involvement is not only applicable to bully-victims, but also to victims. Both groups showed biases in their interpretations of social information, however differences between these groups can be seen in how they respond to these biases. Whereas victims more often select withdrawn or avoidant behaviours (Schwartz, 2000), bully-victims favour retaliatory and aggressive responses (Camodeca et al., 2003; O'Brennan et al., 2009).

Differences in the behavioural responses between bully-victims and victims could also be influenced by the family environment. Family systems theories propose that family dynamics and inter-family relationships may contribute toward the development of aggressive behaviours (Loeber & Hay, 1997). These behaviours may be modelled or reinforced within the family, and are then likely to be extended to the peer group (Cross & Barnes, 2014). In comparison to other groups, bully-victims are more likely to come from dysfunctional families (Lereya et al., 2013a). They also perceive less parental warmth/support and are more likely to be rejected and maltreated by their parents (Bowers et al., 1994; Bowes et al., 2009; Veenstra et al., 2005). Victims however do not differ to uninvolved children with regards to their family environment, and perceive their relationships with parents to be positive overall (Schwartz et al., 1997; Veenstra et al., 2005). Although bullies may also be frequently exposed to adult aggression and conflict, bully-victims may experience more hostile and abusive family treatment (Schwartz et al., 1997). Exposure to victimisation within the home, whether by parents or siblings, increases the vulnerability of children and adolescents for also being bullied by peers (Duncan, 2004; Wolke & Skew, 2012).

Regardless of whether bully-victim status is better explained by poor resource control, dysfunctional family environments, or a lack of social-cognitive skills; the low sociometric status of this group, along with their negative social and emotional attributes, places bully-victims at increased risk of victimisation. The high reactivity of this group and frequent displays of anger or emotional distress, particularly in response to their victimisation, may provide a further reward for bullies (Schwartz, 2000). Bullies may also expect that by targeting these highly disliked and rejected individuals, their behaviour is unlikely to be punished by the peer group (Yang & Salmivalli, 2013). Bully-victims are also more vulnerable to being manipulated and controlled by bullies, with whom they may seek out allegiances in attempts to raise their own social status. Bully-

victims could therefore be easily coerced into carrying out the overt acts of aggression towards others; thereby becoming the more visible perpetrators of bullying, whilst the true instigators (i.e., the ring leader bullies) remain hidden (Garandeau & Cillessen, 2006). Thus bully-victims are likely to experience further rejection by peers and receive increased punishment from teachers, parents or other adults.

In addition to the influence social and environmental factors, there has also been speculation about the role of genetic factors in the risk for bullying and victimisation. Bowes et al. (2013) reported that chronic victimisation throughout childhood and adolescence is primarily influenced by heritable factors, with Ball et al. (2008) proposing that approximately 73% of the variation in victimisation, and approximately 61% of the variation in bullying, is accounted for by genetics. It may be that the characteristics associated with bullying and victimisation may be highly influenced by genetic factors, which in turn increases the likelihood of bullying or being bullied. For example, certain characteristics associated with anti-social behaviour; such as sensation-seeking and impulsivity may be highly genetically influenced (Jacobson, Prescott, & Kendler, 2002). With regards to characteristics associated with bullying, it may be possible that the high levels of callous-unemotional traits found in study two for bullies and bully-victims may have some genetic influence (Viding et al., 2013). Specifically, variations in the oxytocin gene may account for the development and expression of these traits in the perpetrators of bullying, as reported for aggressive and anti-social youth (Beitchman et al., 2012).

Similarly, with regards to the characteristics associated with victimisation, internalising symptoms and emotional dysregulation has been found to be highly heritable (Haberstick, Schmitz, Young, & Hewitt, 2005; Kozak, Strelau, & Miles, 2005). Genetic factors therefore could also account for the high levels of affective instability found in study three for those who were victimised. For example, Sugden et al. (2010) suggested that genetic variation in the serotonin transporter gene, may increase the risk of victimised children developing emotional problems in adolescence. The potential influence of genetics is beyond the scope of this thesis, however are important to consider when addressing influences and risk factors for bullying involvement. These factors could not only account for an increased risk of bullying and victimisation, but also for the behavioural or emotional characteristics and outcomes associated with those involved.

Whilst resource control may be a motivating factor for bullying in adolescence, it may be that other theories are more applicable to bullying behaviour amongst younger children. Children are more strongly influenced by parents, as their primary social influence, and therefore a family-systems approach may better explain bullying in, particularly younger, children (Bowers et al., 1994; Duncan, 2004). In comparison to adolescents, children are less susceptible to peer influence and pressure, and therefore may be less motivated by acquiring social dominance. More specifically, children have been reported to place less importance on being popular and rather seek more acceptance and friendships from others (Salmivalli, 2010), and this may reduce the use of coercive and anti-social behaviours for increasing social status. With regards to social information processing and bullying involvement in childhood, it is likely that different abilities and deficiencies would be shown at this age across the roles involved in bullying (and those uninvolved). This could be due to the way in which social, cognitive, and emotional skills are continuing to develop at this age, or the reduced range of social experiences children have that may shape their interpretation of social events (Crick & Dodge, 1994; Dodge & Price, 1994). This thesis focuses on exploring bullying in adolescence; a time where bullying and victimisation is thought to peak. However it is important to note that differences in the nature of bullying and the motivations behind this behaviour may be seen across the lifespan, particularly in childhood.

To summarise, the bullying behaviour of adolescents is likely to be linked to their desire for social dominance, their status enhancing behaviour, and actual dominance within the peer group (Sijtsema et al., 2009; Vaillancourt et al., 2003; Veenstra et al., 2005). Having a high status provides a range of advantages in terms of access to resources; including material or dating opportunities (Volk et al., 2012; Volk et al., 2015). Whether or not this behaviour is successful in achieving dominance orientated goals may in part rely on the social, emotional, and cognitive abilities of these individuals; particularly the interplay of social information processing and affective processes. Bullies showed an accurate understanding of their social world; however their high levels of CU traits may allow bullies to be emotionally and morally detached from their antisocial behaviours. As suggested by Gasser and Keller (2009), even though bullies may recognise what is morally right or wrong, they do not feel compelled to always do the right thing; especially if their behaviour is rewarded by high social status; i.e., high popularity.

Bully-victims had the highest levels of CU traits, however their negative emotional attributes and biases in early SIP may inhibit the strategic and effective use of aggression for achieving social dominance. Although victims showed similar interpretation biases and high levels of affective instability, it is likely that the differences between victims and bully-victims in their behavioural responses are likely governed by other environmental or individual factors.

11.3. Limitations and strengths

As with any cross-sectional research, a main limitation of these studies is that although several associations are reported, causality cannot be inferred from these associations. Thus, the BASE study cannot report whether bullying involvement, as a bully, victim, or bully-victim, leads to the social and emotional attributes investigated, or whether these attributes result in adolescents adopting these roles. A third stage of the BASE Study was initially planned to be completed at end of the school year, for which the stage two participants would be asked to repeat the screening assessment and some of the stage two measures. The purpose of this would have been to provide some, albeit short-term, longitudinal findings to explore temporal relationships. However, recruiting schools took considerably longer than expected and the organisation of the study met with restrictions due to timetabling, availability of computer rooms, and the exam commitments of the older pupils. It was therefore logistically difficult to incorporate a third assessment stage before the end of the summer term, and this design plan was abandoned. Some longitudinal research on bullying and sociometric status has been conducted. For example, bullying has been found to facilitate social dominance during the transition from primary to secondary school (Pellegrini & Long, 2002), and conversely popularity has been associated with subsequent bullying behaviour (Sentse, Veenstra, Kiuru, & Salmivalli, 2015b). However further longitudinal research is needed to explore the associations reported in this thesis.

Secondly, the participating schools were located within a relatively small geographical area, and therefore the sample may not be representative of all adolescents within the UK, or indeed worldwide. The schools recruited showed some ethnic diversity, however a sizeable majority of the sample were of White British origin. It is unclear whether geographical or cultural differences would substantially influence the results. For

example cultural differences have been shown in emotion perception (Jack, Garrod, Yu, Caldara, & Schyns, 2012; Matsumoto, 1989), and in the experience of emotions; including intensity, duration, and control (Scherer, Wallbott, & Summerfield, 1986). However, the prevalence of bullying and ethnic diversity of the participants assessed in these studies, were similar to those reported from previous research involving children and adolescents in the UK (Tippett et al., 2013; Wolke et al., 2001a). The focus of this thesis was to explore the social and emotional attributes of those who perpetrate bullying, and findings were derived from group comparisons made within this sample of adolescents. Whilst the generalisability of these findings can be questioned, the conclusions drawn from these studies are reported specifically in relation to the group difference in this sample.

Thirdly, a number of the measures used; i.e., the ambiguous photographs and the combined affective instability scale, were novel to this research, or consisted of a reduced set of items from the original scales. The items used for these measures were based either on the data obtained within pilot studies, or findings, including factor loadings, from existing studies. Although a good level of reliability was reported for most measures, some (i.e., the social situation vignettes), showed low levels of internal consistency. Overall, further validation of these measures is needed. It is also important to note that for many of these measures, the effect sizes reported for findings were relatively small overall, and therefore the 'real-word' effects of these findings may not be substantive.

It could also be argued that the bullying/victimisation scale is more a measure of victimisation than of bullying perpetration. The behaviours described in this scale do not specifically address the imbalance of power important for defining bullying perpetration (Smith et al., 2002). Participants were not provided with a definition of bullying, nor was bullying mentioned throughout the study. Therefore, it is possible that participants responded to items; i.e., hitting, pushing or shoving others, in relation to an 'equal' behavioural exchange between peers. For example, two boys may repeatedly fight one another due to a mutual dislike for each other; however these boys may be of equal strength and standing (Felix, Sharkey, Green, Furlong, & Tanigawa, 2011). Therefore responses may be more an indication of aggressive behaviour and interaction between peers, rather than bullying specifically (Smith et al., 2002). A definition of bullying could

have been provided, however this has been found to reduce rates of bullying and victimisation reported by young people (Kert, Codding, Tryon, & Shiyko, 2010).

Finally, the dependent measures in studies two and three were all based solely on self-reports, and may therefore be vulnerable to subjective errors (Yang et al., 2016). The data obtained from these measures may be affected by distortions in adolescents' self-perceptions or by 'jokester' (intentionally false) responses (Fan et al., 2006). With regards to emotional traits and attributes, there may be value in obtaining data from multiple informants, i.e., peer, parents, or teachers, to reduce the risk of subjective biases. However this approach would not be suitable for the assessment of early social information processing, for which findings represent the subjective interpretations of an individual. Similarly, a limitation of study one was the potential risk of shared variance by using peer nominations for determining both the sociometric outcome variables and the bullying roles. As noted in this study however, the combined use of self- and peer reports in establishing these roles reduced the risk of shared variance from using peer nominations alone, and the under-reporting of bullying perpetration associated with self-report methods (Solberg & Olweus, 2003).

Thus, the use of both self- and peer-reported bully involvement is a main strength of this study. Overall, these two methods, despite each of their potential limitations, are thought to complement each other (Salmivalli & Peets, 2009). Self-reports address the subjective experiences of an individual that may often not be known or go unnoticed by the peer group, whereas peer nominations reduce the risk of individual bias (Cornell & Brockenbrough, 2004). This combined method of assessment had the overall advantage of identifying a large enough number of bullies to be assessed in stage two, which allowed for sufficiently powered comparisons to be made between groups.

A substantial sample of bully-victims was also identified; which contradicts previous studies that typically report bully-victims to be the smallest group (Menesini et al., 1997; Pellegrini et al., 1999). However, the prevalence rates of bully-victims show large variations across reports, between 4 and 29% (Schwartz et al., 2001), and this could be due either to inconsistencies in the way in which bullying involvement is measured, or the criteria used to categorise participants to groups (Solberg et al., 2007). Typically, higher prevalence rates have been found in studies in which bullying involvement is assessed using a number of behavioural descriptions (Baldry & Farrington, 1998;

Mynard & Joseph, 1997), rather than those who provide a definition of bullying and solely ask participants how often they have been bullied/bullied others (Boulton & Smith, 1994; Menesini et al., 1997). The former method was employed within the BASE study, and could account for the higher number of bully-victims identified than other reports. Nonetheless, the prevalence of bully-victims reported in this study is consistent with a number of previous studies (Austin & Joseph, 1996; Hanish & Guerra, 2004), and is also supported by findings that the least prevalent group is in fact the 'pure' bullies, rather than bully-victims (Winsper et al., 2012; Wolke et al., 2014). However, the inconsistencies in the way these roles are defined and measured should be considered when comparing findings across studies.

The direct comparisons of bullies, victims, and bully-victims, can be considered another strength of this research. Although these roles have been addressed previously in research, there is a lack of findings that have directly compared them. For example, a number of studies have investigated characteristics associated with bullying and victimisation by identifying differences between bullies and non-bullies only (or victims vs non-victims) (Zych et al., 2017). Understanding the differences between bullies, bully-victims, and victims, and also the ways they may differ to those uninvolved, is important to further knowledge of how these roles develop and are maintained over time. It may also help those in a position of responsibility, i.e., teachers, to identify those who are involved in, or at risk of being involved in, bullying within these roles.

As highlighted in chapter 9, to my knowledge, this is the first study to assess affective instability in relation to bullying involvement. The significance of this trait for emotional and psychological well-being should not merely be restricted to the study of borderline personality disorder or anxiety and depression, but it is likely to show relevance outside clinical domains. Given the associations found between victimisation and later BPD (Wolke et al., 2012) and depression (Copeland et al., 2013; Sansone et al., 2010; Zwierzynska et al., 2013), and difficulties with emotion regulation reported for victims (Frizzo et al., 2013; McLaughlin et al., 2009), affective instability may be an important aspect of emotional functioning with regards to bullying involvement. Further longitudinal research is needed to identify whether affective instability is a precursor to or a symptom of being victimised in adolescence, or if this trait mediates the association between victimisation and the development of internalising disorders.

Finally, this research utilised several widely-validated measures; namely the Inventory of Callous-Unemotional Traits, the Interpersonal Reactivity Index, and the three scales used to generate the combined affective instability scale (i.e., Affective Lability Scale, Affective Intensity Measure, and the Affective Control Scale). The individual and demographic information that was collected during stage one also allowed for potential confounding variables to be identified and controlled for in the analyses for each study.

11.4. Implications and Future Directions

The findings presented in this thesis have important implications for educators in implementing effective anti-bullying programmes in their schools. Interventions to tackle bullying in childhood and adolescence have typically shown mixed results, and overall have shown less success with adolescents particularly (Smith, 2016). The findings from study one (chapter 7) support previous claims that adolescent bullies often experience social rewards in the form of perceived popularity and increased social status. This makes the task for anti-bullying interventions even more challenging, as there is little motivation for bullies to change their behaviour (Sijtsema et al., 2009). The Finnish KiVa anti-bullying program developed in 2006 supports this claim, with the program showing overall less success with highly popular bullies (Garandeau et al., 2014a). Therefore, educators may more effectively 'target' the popular bully by establishing ways in which social dominance can be achieved or maintained through pro-social means.

It is also becoming more widely recognised that the whole peer group should also be addressed to reduce the social power afforded to bullies, which ultimately provides a reward or reinforcement for their behaviour (Salmivalli, 2010). One way this may be achieved is to address the status hierarches found within classrooms (Garandeau et al., 2014b). It has been reported that stability of bullying/victimisation is higher, i.e. it is more difficult for adolescents to change roles, when there are larger variances in peer status or hierarchies within the classroom (Schäfer et al., 2005; Wolke, Woods, & Samara, 2009). Therefore schools should encourage more equal relationships amongst their pupils to try and inhibit the social environment in which bullying can thrive (Garandeau et al., 2014a).

Similarly, with regards to interventions, the results from chapter 9 suggest that low empathy may not be as influential in the perpetration of bullying as often claimed. Empathy has often been the focus of bullying prevention strategies in schools (Zych et al., 2017), whereby pupils are encouraged to put themselves in the victims' shoes, and consider the emotional impact that bullying has on these victims. However previous findings regarding empathy and bullying have been highly inconsistent, and the bullies assessed in study three (chapter 9) did not display significant differences in their levels of empathy to those uninvolved in bullying. Thus, attempts to combat bullying by promoting empathic skills alone, is unlikely to be successful for many bullies.

The findings across these studies highlight the unique profile of attributes found in bully-victims that distinguishes them from both bullies and victims; thus emphasising the need to assess bully-victims as a distinct group. The adverse outcomes and severe behavioural difficulties associated with bully-victims warrant additional resources and a focus on devising ways to help these adolescents escape their role. The rejection that bully-victims experience by peers may impact upon the way that social situations are approached and processed. This may exacerbate callous, unempathic, and unstable traits, and generate aggressive or maladaptive behaviours in response to their social world. It is likely that these attributes then lead to further ostracism from the peer group; thus strengthening biases in social information processing. This cycle is difficult to change, and may explain the stability found for the bully-victim role throughout childhood and adolescence (Lereya et al., 2015). Bully-victims are likely to have a reputation within the school as being the most aggressive and troublesome pupils, and this notoriety may lead to this group being overlooked by peers or teachers as victims (Yang & Salmivalli, 2013).

There is a need for longitudinal research to explore the causal relationships between bullying involvement and the social and emotional characteristics of adolescents involved. This is important to identify the individual attributes that could be risk factors for becoming a bully, bully-victim, or victim; and should therefore be addressed in attempts to prevent and reduce bullying, or the adverse outcomes associated with these roles. The findings from study three (chapter 9) showed that bully-victims, in addition to victims, had high levels of affective instability (AI). This could have implications for intervention, not only within schools but within clinical practice.

However this research explored only a handful of emotional attributes, and relied solely on self-report measures. Obtaining physiological measures of emotion, for instance emotional arousal, may provide better insight into how these roles differ in sensitivity or responsiveness to emotional stimuli, rather than self-perceptions of their own emotionality. Previous studies of emotion arousal have used film clips or distressing images (Lang & Bradley, 2007), however it is difficult to obtain stimuli with an appropriate level of distressing content to evoke arousal in young people, whilst adhering to ethical standards.

Although a range of individual characteristics and demographic information was collected across the studies, there are a number of potential individual and situational characteristics that could be explored. For example sexuality may be a factor associated with bullying involvement (Kahle, 2017), or the family climate may influence the emotional development of children and adolescents (Morris, Silk, Steinberg, Myers, & Robinson, 2007). Other physical attributes could be considered in relation to bullying involvement and sociometric status; e.g., athleticism and attractiveness, or the desire to enhance characteristics that are perceived to be attractive to others (Lee, Guy, Dale, & Wolke, 2017a; Lee et al., 2017b).

The type of bullying that adolescents perpetrate and/or experience may also influence the social and emotional characteristics and outcomes associated with the bullying roles. For example, relational forms of bullying are often carried out with the aim of damaging an individual's reputation (Archer & Coyne, 2005), and therefore may have a more negative impact on victims' peer relationships and social status than physical victimisation (Crick, 1996). Conversely, relational bullies may experience greater social rewards from this type of bullying than those who use more overt and physical forms (Cillessen & Mayeux, 2004; Rose, Swenson, & Waller, 2004). Similarly, we may find that the social and emotional attributes found for the bullying roles may be highly influenced by the type of bullying perpetrated. For example, higher levels of callous-unemotional traits could be found in those who carry out more relational bullying (Reijntjes et al., 2013a). This type of bullying is often considered 'cold', calculated, and strategic, and thus potentially influenced by these underlying callous and unemotional attributes.

Gender differences have also been reported with regards to the type of bullying perpetrated and experienced; with a male bias found in direct/physical forms of bullying, and females involved in more relational forms of bullying/victimisation (Bradshaw, Waasdorp, & Johnson, 2015; Nansel et al., 2001; Wolke et al., 2001b). Indeed, in stage 1 of the BASE study, there was a higher prevalence of self-reported direct bullying and victimisation amongst males than females; however a female bias for relational bullying was not shown (see chapter 6, table 6.3). Although the type of bullying/victimisation was identified for the participants in the BASE study, further analysis was not conducted on this data. The difficulty with classifying these groups arises from the considerable overlap between the different forms of bullying/victimisation that adolescents experience (Bradshaw et al., 2015; Wang, Iannotti, Luk, & Nansel, 2010; Wolke et al., 2017); and this makes it difficult to separate their individual influences. Nonetheless, it may be important to more often address these different types of bullying/victimisation when exploring the characteristics or outcomes associated with those involved.

This research adds to existing knowledge and provides new contributions to understanding the social and emotional profiles of adolescent bullies, victims, and bully-victims. The conclusions drawn from this research are consistent with resource control theories of aggression, whereby bullying is used as means to gain control over resources or dominance within the peer group. Differences in affective and social information processing may account for differences between the perpetration roles (bullies and bully-victims) in their resource control, and account for some of the differences found between all the roles involved in their sociometric status. However other social and environmental influences may also account for involvement in bullying, and therefore an integration of individual and systems theories is required to gain deeper understanding of this issue (Ettekal et al., 2015). School interventions are more likely to be effective by addressing bullying at both the individual level, and also the broader systems in which children and adolescents are embedded (Cook et al., 2010).

In conclusion, the findings presented in this thesis have implications for research, health and education in relation to bullying and victimisation in adolescence. With regards to research, the most important implications of these findings relate to the

independent assessment of bully-victims. These adolescents form a distinct group with unique characteristics. The social and emotional deficits found for bully-victims in this research, in addition to the severe adverse outcomes that have been reported for this group, also highlights the importance for early identification of bully-victims within schools. The high levels of affective instability found in victimised adolescents may have important clinical implications. This emotional trait may help to identify those who are currently experiencing, or at risk of victimisation. Furthermore, addressing these unstable affective traits may also help to reduce the psychological outcomes associated with victimisation; namely anxiety, depression, or the potential risk for developing borderline personality disorder; all of which show affective instability to be a core feature. Finally, with regards to education, schools should not only focus on the perpetrators of bullying, but also those who are victimised. Pure bullies were associated the least deficiencies across the studies reported in this thesis; and therefore, addressing the social biases and unstable affective traits shown by victims and bully-victims may be effective in combatting bullying and its associated effects. Schools also need to address the peer dynamics within schools to reduce the social hierarchies amongst their pupils, along with the social status afforded to bullies by the peer group. These social rewards may ultimately reinforce this behaviour and allow these bullies to thrive.

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APPENDIX A – Information Sheet for Schools

RELATIONSHIPS, HEALTH AND EMOTIONS STUDY

Your school has been invited to take part in this research study. The following information is designed to help you understand what the study is about and what pupils in your school would be asked to do. If anything is unclear or you would like more information please contact us using the details included at the end of this information sheet.

What is the purpose of the study?

The purpose of this study is to understand how 11 to 16-year-old children interact with others, view themselves and others, and to understand more about their health and emotions. This will help us to develop interventions in the future for other young people who may have difficulties with their relationships, health and emotions. We are particularly interested in investigating any possible differences between young people who are victimised and those who bully, in comparison to their non-involved peers.

Although pupils and their parents will be given lots of information about the study and what will be expected from them, at this point we will not disclose that we are investigating bullying. The only reason for initially withholding this information is to avoid any affect this may have on participants' responses to questions or behaviour throughout the study. Participants will be fully debriefed once all the data has been collected.

Why has my school been invited to take part?

We have invited your school because your pupils are between 11 and 16 years old.

Who are "we"?

We work at the University of Warwick. Kirsty Lee and Alexa Guy are the PhD students who will be running the study and Professor Dieter Wolke is their supervisor. Professor Wolke is a leading expert on research into the determinants and consequences of childhood bullying. As such, this study will be of international importance.

What will taking part involve for the participants?

In February/March 2015, the whole school will be invited to participate and all participants with informed consent will be asked to complete task 1. For task 1 the participants will be located in a computer lab at school and the tasks will be online. Task 1 should take about 30-40 minutes to complete.

Task 1	Answer questions about: • Themselves and how they get on with others (self-reported bullying and victimisation)

	• How people in their form/tutor group get on with others (peer nominated bullying and victimisation) • Their strengths and difficulties and how they feel about themselves (i.e. their self-esteem)

In May/June 2015 a selection of participants (approximately 40-70 pupils per school, depending on school size) who complete task 1 will be asked to complete tasks 2 and 3. Tasks 2 and 3 will each take about an hour to complete. For both tasks participants will be located in a computer lab at school and the tasks will be online.

Task 2	Answer questions about: • Their appearance • Their physical development • Their activity and behaviours • The type of person they think they are • How important some things are to them • Their thoughts and emotions about four scenarios they will read
	Participants will also be asked if: • We can take some measurements, such as their height

Task 3	Answer questions about: • Their thoughts about 5-8 photographs that they will be shown • Their thoughts about six scenarios that they will read • Their thought and emotions about some short film clips • Their emotions in general and how they change • Their emotional and caring traits Participants will also be asked to: • Play an online game with a partner

Towards the end of the school year some participants may be asked if they would like to be interviewed. Participants and parents will be given information about the interview in May or June. The decision to be interviewed will be separate from the decision to take part in the study described above.

What are the possible benefits/disadvantages to taking part?

We do not expect this study to disadvantage your pupils in any way. Participants who complete task 1 and those who are selected to do tasks 2 and 3 and complete all activities will be given a “Certificate of Participation” from the University of Warwick. Participants who complete tasks 2 and 3 will be entered into a prize draw to wine a £50 Amazon voucher.
As an expression of our thanks and compensating schools for the help and time they have given, the researchers will visit your school to deliver a presentation on bullying and offer a resource pack to teachers.

Will our pupils’ participation in this study be kept confidential?

All the information collected for this study will be kept confidential and neither the school nor individual participants will be identifiable in any report or publication we

write. The only time participants will give us their name is on the consent form and this will be kept separate from all other information they provide.
Researchers have a legal responsibility to make sure that young people involved in research are kept safe, so the only time we would pass on information about any of your pupils to someone outside the study is if we were concerned for their safety.

What happens to the results of the research study?

The data collected will be analysed and the results will be used to write a research report. The report will contain no information that could identify individual pupils or your school.

Contact for further information:

If you have any questions or you would like any more information then please contact the researchers below. If we are not able to take your call, please leave a message and we will call you back.

Kirsty Lee Msc, BSc (Hons)
Department of Psychology
University of Warwick
Coventry CV4 7AL
Kirsty.lee@warwick.ac.uk
024 7657 3469

Alexa Guy MRes, BSc (Hons)
Department of Psychology
University of Warwick
Coventry CV4 7AL
A.L.Guy@warwick.ac.uk
024 7652 3158

You can also visit our webpage which has more information about the researchers and this study: **www.warwick.ac.uk/fac/sci/psych/research/lifespan/project**

What if I have any concerns?

If you have any concerns about this study or the way it is being carried out please contact the person below:

Professor Dieter Wolke
Department of Psychology
University of Warwick
Coventry CV4 7AL
D.Wolke@warwick.ac.uk
024 7615 0513

Thank you for taking the time to read this information.

APPENDIX B – Information Sheet for Participants

RELATIONSHIPS, HEALTH AND EMOTIONS STUDY

You have been invited to take part in this research study. Before you decide, it is important for you to understand why the research is being done and what you would have to do. Please read the following information carefully and discuss it with your parents and with others if you wish. Take your time to decide whether or not you wish to take part.

What is the purpose of the study?

The purpose of this study is to understand how young people like you get on with others, how you view yourselves and others, and understand more about your health and emotions. This will help us to develop interventions in the future for other young people who may have difficulties with their relationships, health and emotions.

Why have I been invited to take part?

You have been invited because you are between 11 and 16 years old and go to school in Coventry, Warwickshire, Birmingham or Staffordshire. We are asking everyone in this age group in your school to take part.

Do I have to take part?

It is up to you to decide whether or not to take part. If you do decide to take part, you will be asked to sign a consent form. We will also contact your parents and ask them if they are happy for you to take part. If they have no concern, you can participate in the study.

Who are "we"?

We work at the University of Warwick. Kirsty Lee and Alexa Guy are the researchers who will be in charge of the study and Professor Dieter Wolke is their supervisor.

What will happen if I start taking part in the study but then change my mind?

You can stop taking part at any time without giving a reason and this will not affect you in any way.

What will taking part involve?

In the spring of 2015, *all* participants will be asked to complete task 1. For task 1 you will answer questions online in your schools computer lab. Task 1 should take about 30-40 minutes to complete. Your answers will be completely confidential. They will not be shared with anyone at your school, or used for anything other than this research.

Task 1	Answer questions about: • Yourself and your positive (e.g. liking to hang around with someone) and negative (e.g. spreading rumours) experiences with others in your school • How people in your form/tutor group get on with others • Your strengths and difficulties and how you feel about yourself

In the summer of 2015 *some* participants who completed task 1 will be asked to complete tasks 2 and 3. Tasks 2 and 3 will take about an hour to do. Both tasks will again be online on the computer in the computer lab at your school. Remember, all information will be confidential and not shared with anyone.

Task 2	Answer questions about: • Your appearance • Your physical development • Your activity and behaviours • The type of person you think you are • How important some things are to you • Your thoughts and emotions about four scenarios you will read You will also be asked if: • We can take some measurements, such as your height (this will be done in private)

Task 3	Answer questions about: • Your thoughts about 5-8 photographs that you will be shown • Your thoughts about six scenarios that you will read • Your thought and emotions about some short film clips • Your emotions in general and how they change • Your emotional and caring traits You will also be asked to: • Play an online game with a partner

Participants might be asked to repeat some the tasks above in May or June 2015. This will help us to see if there have been any changes. However, this will depend on your school. Some participants may also be asked if they would be happy to be interviewed. Participants will be given information about the interview in May or June. The decision to be interviewed will be separate from the decision to take part in the study described above.

What are the possible benefits/disadvantages to taking part?
We do not expect this study to disadvantage you in any way. Participants who complete task 1 and those who are selected to do tasks 2 and 3 and complete all activities will be given a “Certificate of Participation” from the University of Warwick.

Will my participation in this study be kept confidential?
All the information collected for this study will be kept private. The answers you give will not be shared with anyone else, including your parents or teachers. When you

complete the tasks you will never be asked for your name or personal details. We will not use your name in any report or publication we write. The only time you will give us your name is on the consent form and this will be kept separate from all other information you provide.
Researchers have a legal responsibility to make sure that young people involved in research are kept safe, so the only time we would pass on information about you to someone outside the study is if we were concerned for your safety.

What happens to the results of the research study?

The data collected will be analysed and the results will be used to write a research report. We will also give your school a report on the key findings. However, there will be no details that could identify you in any report we write.

Contact for further information:

If you have any questions or you would like any more information then please contact the researchers below. If we are not able to take your call, please leave a message and we will call you back. You can also visit our webpage www.warwick.ac.uk/fac/sci/psych/research/lifespan/project, which has more information about the researchers and this study.

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Alexa Guy MRes BSc (Hons)
Department of Psychology
University of Warwick
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A.L.Guy@warwick.ac.uk
024 7652 3158

What if I have any concerns?

If you have any concerns about this study or the way it is being carried out, you, your parents or your teachers should contact the person below:

Professor Dieter Wolke
Department of Psychology
University of Warwick
Coventry CV4 7AL
D.Wolke@warwick.ac.uk
024 7615 0513

What happens next?

You have two weeks to read and understand this information and decide if you want to take part. If you would like to take part in this study, please complete the consent form below and return it to your tutor as soon as possible. Once we receive your consent form and your parents have no concerns that you can take part, we will come to your school and start the study during one of your classes.

Thank you for taking the time to read this information and deciding whether or not to take part in this study. Please keep this information sheet.

Consent form

	Please tick all boxes That apply
I confirm I have read the information sheet and I have been able to think about the information, ask questions and get answers in a way that makes sense to me.	☐
I understand that I do not have to take part and that I can leave the study at any time without giving a reason.	☐
I would like to take part in this study.	☐

Please write your name here (in capitals):

_____

Please sign your name here:

_____

Please write the date here:

_____/_____/_____

APPENDIX C – Information Sheet for Parents

RELATIONSHIPS, HEALTH AND EMOTIONS STUDY

Your child has been invited to take part in this research study. Before you decide whether or not you would like your child to take part, it is important that you understand why the research is being done and what your child would have to do. Please read the following information carefully and discuss it with your child and with others if you wish. If anything is unclear or you would like more information please contact us using the details within this information sheet.

What is the purpose of the study?
The purpose of this study is to understand how 11 to 16 year old children interact with others (i.e. their positive and negative peer relationships), view themselves and others, and to understand more about their health and emotions. This will help us to develop interventions in the future for other young people who may have difficulties with their relationships, health and emotions.

Why has my child been invited to take part?
Your child has been invited because he or she is between 11 and 16 years old and goes to a school in Coventry, Warwickshire, Birmingham or Staffordshire. We are asking all young people of this age in your child's school to take part.

Does my child have to take part?
It is up to you to decide whether or not to allow your child take part. We have also given your child information about this study and they will also decide whether they would like to take part or not. You child will only participate in the study if you both agree this is what you want.

Who are "we"?
We work at the University of Warwick. Kirsty Lee and Alexa Guy are the researchers who will be in charge of the study and Professor Dieter Wolke is their supervisor.

What will happen if my child begins the study but then I change my mind or my child changes their mind?

Your child can stop taking part at any time without giving a reason and this will not affect them in any way.

What will taking part involve?
In spring 2015, *all* participants will be asked to complete task 1. For task 1 the participants will be located in a computer lab at school and the tasks will be online. Task 1 should take about 30-40 minutes to complete.

Task 1	Answer questions about: • Their positive (e.g. liking to hang around with someone) and negative (e.g. spreading rumours) relationships with others in their school • How people in their form/tutor group get on with others • Their strengths and difficulties and how they feel about themselves

In summer 2015, a small selection of participants who complete task 1 will be asked to complete tasks 2 and 3. Tasks 2 and 3 will each take about an hour to complete. For both tasks participants will be located in a computer lab at school and the tasks will be online.

Task 2	Answer questions about: • Their appearance • Their physical development • Their activity and behaviours • The type of person they think they are • How important some things are to them • Their thoughts and emotions about four scenarios they will read Participants will also be asked if: • We can take some measurements, such as their height (this will be done in private)

Task 3	Answer questions about: • Their thoughts about 5-8 photographs that they will be shown • Their thoughts about six scenarios that they will read • Their thought and emotions about some short film clips • Their emotions in general and how they change • Their emotional and caring traits Participants will also be asked to: • Play an online game with a partner

Towards the end of the school year schools will be invited to participate in a further round of assessments. The decision to take part in further assessments will be separate from the decision to take part in the assessments described above. At the same time some participants may also be asked if they would like to be interviewed. Participants and parents will be given information about the interview in May or June. The decision to be interviewed will be separate from the decision to take part in the study described above.

What are the possible benefits/disadvantages to taking part?
We do not expect this study to disadvantage your child in any way. Participants who complete task 1 and those who are selected to do tasks 2 and 3 and complete all activities will be given a “Certificate of Participation” from the University of Warwick.

Will my child’s participation in this study be kept confidential?
All the information collected for this study will be kept confidential. The answers your child gives will not be shared with anyone else. Participants will never be asked for their

name or personal details during the tasks and we will not use their name in any report or publication we write. The only time they will give us their name is on the consent form and this will be kept separate from all other information they provide. Researchers have a legal responsibility to make sure that young people involved in research are kept safe, so the only time we would pass on information about your child to someone outside the study is if we were concerned for their safety.

What happens to the results of the research study?
The data collected will be analysed and the results will be used to write a research report. The results will help to understand young people's relationships and how these relationships affect them. In the report there will be no details that could identify your child. Your child's school will also receive a brief report summarising key findings within their school. However, no child will be identifiable.

Contact for further information:
If you have any questions or you would like any more information then please contact the researchers below. If we are not able to take your call, please leave a message and we will call you back. You can also visit our webpage www.warwick.ac.uk/fac/sci/psych/research/lifespan/project, which has more information about the researchers and this study.

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024 7657 3469

Alexa Guy MRes, BSc (Hons)
Department of Psychology
University of Warwick
Coventry CV4 7AL
A.L.Guy@warwick.ac.uk
024 7652 3158

What if I have any concerns?
If you have any concerns about this study or the way it is being carried out please contact the person below:

Professor Dieter Wolke
Department of Psychology
University of Warwick
Coventry CV4 7AL
D.Wolke@warwick.ac.uk
024 7615 0513

What happens next?
If you are happy for your child to participate in this study **then you do not have to do anything.**

If you do not want your child to participate in this study then please complete the refusal form and return it to your child's tutor using the envelope included with this information pack. It is essential you do this within 2 weeks.

Thank you for taking the time to read this information.

Refusal form

I do not want my child to take part in this study (please tick the box) ☐

Please write your child's name here (in capitals):

_____

Please write your child's year and tutor here (in capitals):

_____

Please write your name here (in capitals):

_____

Please sign your name here:

_____

Please write the date here:

_____/_____/_____

If you do not want your child to participate in this study then please complete and return this form to your child's school by the **2nd February 2015.**

APPENDIX D – Participant Information Sheet for Stage 2

RELATIONSHIPS, HEALTH AND EMOTIONS STUDY - PART 2

Why am I here?

A little while ago you completed an online questionnaire. You have now been selected to take part in the second part of this study.

What do I have to do?

We are asking you to complete two more tasks (see task 1 and 2 below). It will take you about an hour to complete all of the tasks. Remember, all of the information you give us will be confidential and not shared with anyone.

To say thank you for completing all of the tasks today, you will be entered into a prize draw to win a £50 amazon voucher!

Task 1	Answer questions about: • Your appearance • Your physical development • Your activity and behaviours • How important some things are to you • Your thoughts and emotions about some scenarios you will read about You will also be asked if: • We can take some measurements, such as your height (this will be done in private)

Task 2	Answer questions about: • Your thoughts about 5-8 photographs that you will be shown • Your thoughts about six scenarios that you will read • Your emotions in general and how they change • Your emotional and caring traits You will also be asked to: • Play an online game with a partner

Remember – all of the information you give us will be kept private and will not be shared with anyone, including your parents or teachers. You will not be asked for your name during any of the tasks.

Remember - you can stop taking part at any time, without giving any reason. If you decide to stop taking part this will not affect you in any way. If you do not want to take part you can tell the researchers directly or you can ask your teacher or parent to let us know.

Contact for further information:

If you have any questions or you would like any more information then please contact the researchers below. If we are not able to take your call, please leave a message and we will call you back. You can also visit our webpage www.warwick.ac.uk/fac/sci/psych/research/lifespan/project, which has more information about the researchers and this study.

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What if I have any concerns?
If you have any concerns about this study or the way it is being carried out, you, your parents or your teachers should contact the person below:

Professor Dieter Wolke
Department of Psychology
University of Warwick
Coventry CV4 7AL
D.Wolke@warwick.ac.uk
024 7615 0513

Any complaints can also be sent to the Registrar at the University's Ethical Committee at:
Registrar's Office, University House, University of Warwick, Coventry, CV4 8UW.

Thank you for taking the time to read this information. Please keep this information sheet.

APPENDIX E – Bullying Interview

In the past 6 months how frequently has any of the following happened to you?

	Never	1-3 times in past 6 months	More than 4 times but less than once a week	At least once a week
Had belongings taken (1)	❍	❍	❍	❍
Been threatened / blackmailed (2)	❍	❍	❍	❍
Been hit / beaten up (3)	❍	❍	❍	❍
Been tricked in a nasty way (4)	❍	❍	❍	❍
Been called bad / nasty names (5)	❍	❍	❍	❍
Others wouldn't play with you to upset you (6)	❍	❍	❍	❍
Been made to do things you didn't want to do (7)	❍	❍	❍	❍
Had lies / nasty things said about you (8)	❍	❍	❍	❍
Had games spoilt (9)	❍	❍	❍	❍
Had private email, messages or photos forwarded to someone else or where others can see it (10)	❍	❍	❍	❍
Had rumours spread about you online (11)	❍	❍	❍	❍
Got threatening or aggressive emails, instant messages, text messages or tweets (12)	❍	❍	❍	❍
Had embarrassing pictures posted online without permission (13)	❍	❍	❍	❍

In the past 6 months how frequently have you done any of the following?

	Never	1-3 times in past 6 months	More than 4 times but less than once a week	At least once a week
Taken belongings (1)	❍	❍	❍	❍
Threatened / blackmailed others (2)	❍	❍	❍	❍
Hit / beaten up others (3)	❍	❍	❍	❍
Tricked others in a nasty way (4)	❍	❍	❍	❍
Called others bad / nasty names (5)	❍	❍	❍	❍
Wouldn't play with others to upset them (6)	❍	❍	❍	❍
Made others do things they didn't want to do (7)	❍	❍	❍	❍
Told lies / nasty things about others (8)	❍	❍	❍	❍
Spoilt other people's games (9)	❍	❍	❍	❍
Forwarded others private email, messages or photos to someone else or where others can see it (10)	❍	❍	❍	❍
Spread rumours about someone online (11)	❍	❍	❍	❍
Sent threatening or aggressive emails, instant messages, text messages or tweets (12)	❍	❍	❍	❍
Posted embarrassing pictures of someone online without their permission (13)	❍	❍	❍	❍

APPENDIX F – Strength and Difficulties Questionnaire

These questions will help us learn about your strengths and difficulties. It would help us if you answered all items as best you can even if you are not absolutely certain or the item seems daft! Please base your answers on how things have been for you over the

last six months. Remember there are no right or wrong answers! All of your answers will be kept private! Please answer honestly, this is really important!

	Not true	Somewhat true	Certainly true
I try to be nice to other people. I care about their feelings (1)	❍	❍	❍
I am restless, I cannot stay still for long (2)	❍	❍	❍
I get a lot of headaches, stomach-aches or sickness (3)	❍	❍	❍
I usually share with others (food, games, pens etc.) (4)	❍	❍	❍
I get very angry and often lose my temper (5)	❍	❍	❍
I am usually on my own. I generally play alone or keep to myself (6)	❍	❍	❍
I usually do as I am told (7)	❍	❍	❍
I worry a lot (8)	❍	❍	❍
I am helpful if someone is hurt, upset or feeling ill (9)	❍	❍	❍
I am constantly fidgeting or squirming (10)	❍	❍	❍
I have one good friend or more (11)	❍	❍	❍
I fight a lot. I can make other people do what I want (12)	❍	❍	❍
I am often unhappy, down-hearted or tearful (13)	❍	❍	❍
Other people my age generally like me (14)	❍	❍	❍
I am easily distracted, I find it difficult to concentrate (15)	❍	❍	❍
I am nervous in new situations. I easily lose confidence (16)	❍	❍	❍
I am kind to younger children (17)	❍	❍	❍
I am often accused of lying or cheating (18)	❍	❍	❍
Other children or young people pick on me or bully me (19)	❍	❍	❍

I often volunteer to help others (parents, teachers, children) (20)	❍	❍	❍
I think before I do things (21)	❍	❍	❍
I take things that are not mine from home, school or elsewhere (22)	❍	❍	❍
I get on better with adults than with people my own age (23)	❍	❍	❍
I have many fears, I am easily scared (24)	❍	❍	❍
I finish the work I'm doing. My attention is good (25)	❍	❍	❍

APPENDIX G – Self-Esteem Scale

These questions will help us learn about your general feelings about yourself. Please choose based on how you have been feeling over the last six months.
Remember There are no right or wrong answers! All of your answers will be kept private! Please answer honestly, this is really important!

	Strongly agree	Agree	Disagree	Strongly disagree
On the whole I am satisfied with myself (1)	❍	❍	❍	❍
At times I think I am no good at all (2)	❍	❍	❍	❍
I feel that I have a number of good qualities (3)	❍	❍	❍	❍
I am able to do things as well as most other people (4)	❍	❍	❍	❍
I feel I do not have much to be proud of (5)	❍	❍	❍	❍
I certainly feel useless at times (6)	❍	❍	❍	❍
I feel that I'm a person of worth (7)	❍	❍	❍	❍
I wish I could have more respect for myself (8)	❍	❍	❍	❍
All in all, I am inclined to think that I am a failure (9)	❍	❍	❍	❍
I take a positive attitude toward myself (10)	❍	❍	❍	❍

APPENDIX H – Peer Nominations for Bullying Involvement and Sociometric Status

These questions will help us learn about how people in your form / tutor group get on with others. For each question in this section please use the list of names on the piece of paper you have been given. Read the question and look at the list of names. Once you have chosen who you would like to nominate, look at the number next to that person's name and then tick the box that shows that number on screen. For example: 01. Joe Bloggs 02. Josephine Bloggs 03. Juliette Bloggs 04. Matt Smith 05. Mary Smith 06. Melanie Smith. If you wanted to nominate Juliette Bloggs, you would tick the box next to 03:

If you wanted to nominate Josephine Bloggs and Matt Smith, you would tick the box next to 02 and 04:

If you decide that nobody on the list fits the description, tick the "nobody" option:

For each question you can choose a maximum of three people from the list. Do not choose yourself. Choose your answers based on the last six months. Remember there are no right or wrong answers! All of your answers will be kept private! Please answer honestly, this is really important! If you are unsure about what to do then please raise your hand, one of the study team will come and assist you.

Bullying Involvement

- Some people are repeatedly hit, shoved around, beaten up, threatened, blackmailed, insulted, called nasty names, played tricks on, or stolen from. Which people in your form/tutor group have these things happened to?

- Some people repeatedly hit, shove around, beat up, threaten blackmail, insult, call nasty names, play tricks, or steal things from others. Which people in your form/tutor group do these things?

- Some people are repeatedly left out of get-togethers, parties, trips or groups, are ignored on purpose, are not wanted around, or have nasty lies, rumours or stories told about them on purpose. Which people in your form/tutor group have these things happened to?

- Some people are repeatedly left out of get-togethers, parties, trips or groups, are ignored on purpose, are not wanted around, or have nasty lies, rumours or

stories told about them on purpose. Which people in your form/tutor group do these things?

Sociometric Status

- Who are the most popular people in your form / tutor group?
- Who are the least popular people in your form / tutor group?
- Which people would you most like to play / hang out with in your form / tutor group?
- Which people would you least like to play / hang out with in your form / tutor group?

APPENDIX I - Reading the Mind in the Eyes Test (child's version)

Practice

For this task you will see photographs of people's eyes For each photo you will be asked to choose what you think the person is thinking or feeling from 4 options. You will see the picture for 5 seconds and then have 10 seconds to choose your answer. Please do not press anything until the photo disappears. This is a Practice

What is this person thinking or feeling?

Jealous

Scared

Relaxed

Hate

The correct answer was SCARED. That is the end of the practice. You will now see 8 more photographs of eyes and again have 4 choices for what you think the person is thinking or feeling. You will see the picture for 5 seconds and then have 10 seconds to choose your answer. Please do not press anything until the photo disappears. This time you will not be shown the correct answer.

1. **What is this person thinking or feeing?**

   Hate

   Surprised

   Kind

   Cross

2. **What is this person thinking or feeling?**

   Friendly

   Sad

   Surprised

   Worried

3. **What is this person thinking or feeling?**

Unkind

Cross

Surprised

Sad

4. **What is this person thinking or feeling?**

Relaxed

Upset

Surprised

Excited

5. **What is this person thinking or feeling?**

   Angry

   Daydreaming

   Sad

   Interested

6. **What is this person thinking or feeling?**

   Remembering

   Happy

   Friendly

   Angry

7. **What is this person thinking or feeling?**

Joking

Relaxed

Nervous

Sorry

8. **What is this person thinking or feeling?**

Kind

Surprise

Not Pleased

Excited

APPENDIX J – Hostile Attribution Bias for Ambiguous Situations

You are now going to see some photographs of different situations. Please choose which statement best describes what is happening in the photo

1. **What is happening in this picture?**

- The group (‘1’ in picture) are spreading an embarrassing rumour about the other girl on Facebook

- The group (‘1’) are posting something about the other girl on Facebook

- The group (‘1’) are looking at the other girl’s Facebook page

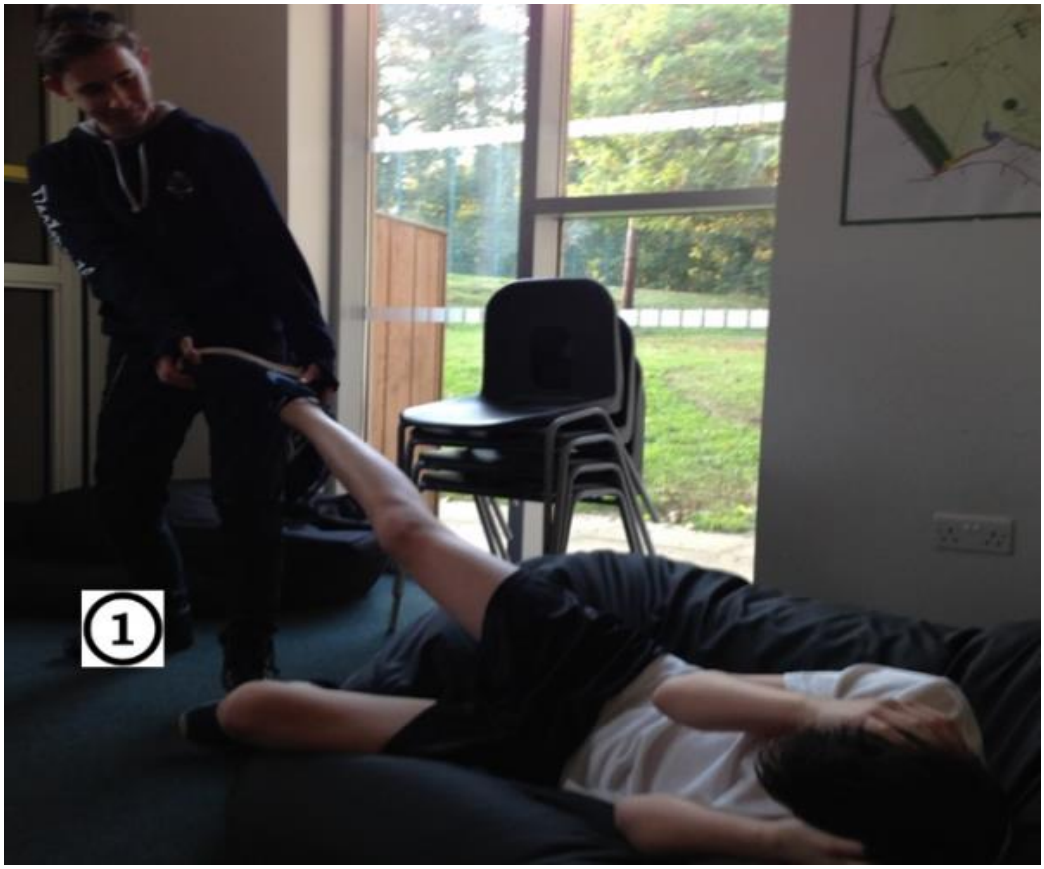
- The group (‘1’) are talking about things they are reading on Facebook

2. What is happening in this picture?

- The two boys (‘1’ in picture) are telling jokes and laughing
- The boys (‘1’) are telling jokes and laughing and they look at the other boy
- The boys (‘1’) are telling a joke about the other boy
- The boys (‘1’) are telling a nasty joke about the other boy and laughing about him

3. What is happening in this picture?

- Boy 1 has overpowered and is attacking his brother
- Boy 1 has pushed his brother over and is pulling him by the leg
- Boy 1 is playing a joke on his brother during their play fight
- The brothers are messing around play fighting



4. What is happening in this picture?

- The group of girls (‘1’ in picture) are talking about the boy and are laughing about him

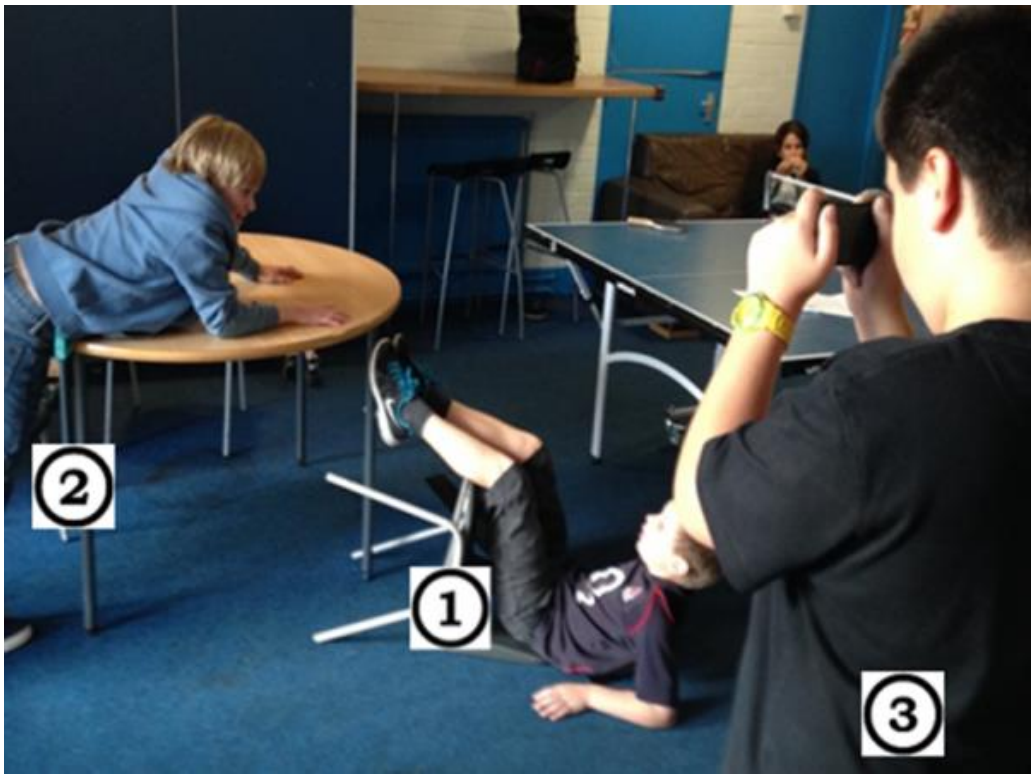
- The group of girls (‘1’) are laughing and talking about the boy as they walk by

- The group of girls (‘1’) are laughing and talking and notice the other boy as they walk past

- The group of girls (‘1’) are walking through the park laughing and talking with each other

5. What is happening in this picture?

- The three boys are having fun filming the pranks they are staging together
- The other boys have taken a video as a joke of Boy 1 falling off his chair
- The boys (2 and 3) are making videos of them playing pranks on Boy 1
- The Boys (2 and 3) are humiliating Boy 1 and taking videos of it to send to their classmates



6. What is happening in this picture?

- Girl 1 is going to use her sister's phone without asking
- Girl 1 is taking her sister's phone without asking
- Girl 1 is getting her sister's phone out of the bag
- Girl 1 is getting a phone out of the bag

7. What is happening in this picture?

- The boys are messing about in the playground
- Boy 1 has fallen down whilst messing about with the other boys
- Boy 1 has been pushed over by the other boys
- Boy 1 has been pushed to the ground by the other boys to get him out of their way

8. What is happening in this picture?

- Girl 1 is trying to steal the bag from the other girl to upset her
- Girl 1 has grabbed the bag from the other girl as a joke but won't let go
- Girl 1 has grabbed the bag from the other girl as a joke
- The girls are messing about having fun

APPENDIX K - Social Situation Vignettes

You will now read some short descriptions of different situations. For each situation please choose the most likely reason/explanation for this.

1. **One morning you are on the bus on your way to school. Two other pupils from your year, Mark and Sophie, are sitting nearby and are talking to each other. You hear them talking about your good friend Melissa's birthday party next Friday night. You have not received an invitation to Melissa's party.**

   What do you think is the most likely reason for this?

   - Melissa must have decided not to invite you to her party and does not want you there, there are often parties that you're not invited to **(Characterological self-blame)**

   - Your invitation must have got lost in the post, you have always been the type of person that unlucky things like that happen to **(External blame)**

   - Perhaps you have done something to upset Melissa and she no longer wants to be your friend. You haven't upset any of your other friends, so you wonder what you have done wrong **(Behavioural self-blame)**

   - Melissa must have thought she had already invited you and just forgotten **(External blame)**

2. **When you are the team captain during sports activities with your club, you always pick your good friend Marcus first. When Marcus is the team captain he always picks you first. Today, Marcus was the team Captain and he picked Kate first.**

   What do you think is the most likely reason for this?

   - Marcus often gets in bad moods and behaves strangely, this isn't anything to do with you **(External blame)**

   - You must have given Marcus the impression that you had fallen out for some reason today **(Behavioural self-blame)**

- You are bad at the sport you are playing today that it's not surprising he picked someone else. If it had been a different sport you're sure he would have picked you first **(External blame)**

- Kate is obviously a much better friend than you and he must like her more **(Characterological self-blame)**

3. **You are standing in the corridor one day before your class. While you are standing there, two girls from your year; Rachel and Tina, walk by. They giggle as they pass you. Rachel turns to Tina and whispers something and they both giggle.**

   What do you think is the most likely reason for this?

   - They are laughing at you, there must be something funny about your appearance today; perhaps you have something stuck to you **(Behavioural self-blame)**

   - They would have been laughing at something else and it was just a coincidence that you happened to walk past at that moment **(External blame)**

   - They are laughing at you, you have experienced people talking behind your back in this way before **(Characterological self-blame)**

   - They always seem to be laughing as you walk by, but they just joke around a lot. They probably laugh just as much when you're not around **(External blame)**

4. **You have text your friend Jade and did not get a reply, however then you see Jade has written a Facebook status from her phone since receiving your message and therefore must have been on her phone and seen your text.**

   How would you explain this behaviour?

   - It's possible that Jade's phone is not working properly and she may not have received your text **(External blame)**

   - You must have upset Jade in some way because she would never normally ignore you like this **(Behavioural self-blame)**

- Jade may have seen your text and then been distracted and forgot to reply, your friends do this a lot **(External blame)**

- Jade always replies to everyone else's texts but never yours. She obviously prefers her other friends to you and therefore treats them better **(Characterological self-blame)**

5. **When your teacher assigns group work, you usually work with Harry. Today, when the teacher tells you everyone to do a presentation in pairs, Harry chooses to do his presentation with Andy.**

   Why do you think Harry has chosen to work with Andy rather than you?

   - You've been in a really bad mood today no wonder he doesn't want to work with you **(Behavioural self-blame)**

   - He would rather work with Andy than you, people normally enjoy working with you for a while and then find better friends **(Characterological self-blame)**

   - You aren't very good at presentations and talking in front of people and Andy usually gets top marks in this type of project so it is understandable that Harry would rather work with Andy than you for this task **(External blame)**

   - Andy must be upset about something and Harry is working with him as a one-off to cheer him up **(External blame)**

6. **During lunch you usually meet your good friend Danielle to sit on the bench and talk. Today you get out a little late and Danielle is already sitting on the bench and talking alone with Craig.**

   Why would Danielle do this?

   - Craig is probably upset and Danielle is comforting him, an upset friend would always take priority over you **(External blame)**

   - This is probably Danielle's way of saying she doesn't want to be your friend any more **(Characterological self-blame)**

- Danielle probably presumed you were not here today when you didn't show up at the usual time and so she decided to sit with Craig in your absence **(External blame)**

- You probably upset Danielle, if you talked you're sure you could sort it out **(Behavioural self-blame)**

APPENDIX L - Interpersonal Reactivity Index

The following statements ask about your thoughts and feelings in different situations. For each statement, please choose a number from the scale on the top of the table to say how well it describes you. Please respond to all of the statements.

	Does Not Describe Me Very Well -2	-1	0	+1	Describes Me Very Well +2
I often have tender, concerned feelings for people less fortunate than me					
I sometimes find it difficult to see things from the "other person's" point of view					
Sometimes I don't feel very sorry for other people when they are having problems					
I try to look at everybody's side of a disagreement before I make a decision					
When I see someone being taken advantage of, I feel kind of protective towards them					
I sometimes try to understand my friends better by imagining how things look from their perspective					
Other people's misfortunes do not usually disturb me a great deal					

If I'm sure I'm right about something, I don't waste much time listening to other people's arguments					
When I see someone being treated unfairly, I sometimes don't feel very much pity for them					
I am often quite touched by things that I see happen					
I believe that there are two sides to every question and try to look at them both.					
I would describe myself as a pretty soft-hearted person					
When I'm upset at someone, I usually try to "put myself in their shoes" for a while					
Before criticising somebody, I try to imagine how I would feel if I were in their place					

APPENDIX M - Inventory of Callous-Unemotional Traits (ICU)

The statements below ask about some of your thoughts and behaviours For each statement, please choose a number from the scale on the top of the table to say how well it describes you Please respond to all of the statements

	Not At All 0	Slightly True 1	Very True 2	Definitely True 3
I express my feelings openly				
What I think is "right" and "wrong" is different from what other people think				
I care about how well I do at school or work				
I do not care who I hurt to get what I want				
I feel bad or guilty when I do something wrong				
I do not show my emotions to others				
I do not care about being on time				
I am concerned about the feelings of others				
I do not care if I get into trouble				
I do not let my feelings control me				
I do not care about doing things well				

I seem very cold and uncaring to others I easily admit to being wrong It is easy for others to tell how I am feeling I always try my best I apologise ("say I am sorry") to persons I hurt I try not to hurt others' feelings I do not feel sorry when I do something wrong I am very expressive and emotional I do not like to put the time into doing things well The feelings of others are unimportant to me I hide my feelings from others I work hard on everything I do I do things to make others feel good				

APPENDIX N – Combined Affective Instability Scale

The statements below ask about your emotions. For each statement, please choose a number from the scale on the top of the table to say how well it describes you.
Please respond to all of the statements

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
One minute I can be feeling ok and then the next minute I'm tense, jittery and nervous					
Many times I feel very nervous and tense and then feel very sad and down					
There are times when I have very little energy and then soon afterwards I have about the same energy level as most people					
There are times when I feel perfectly calm one minute and then the next minute the least little thing makes me furious					
I switch back and forth between being extremely energetic and having so little energy that it's a huge effort just to get where I'm going					

There are times when I am so mad that I can barely stop yelling and other times shortly afterwards when I wouldn't think about yelling at all					
When I'm happy, I feel like I'm bursting with joy					
When a person in a wheelchair can't get through a door, I have strong feelings of pity					
Others tend to get more excited about things than I do					
When I worry, it is so mild that I hardly notice it					
I get overly enthusiastic					
When something bad happens, I tend to be more unhappy than others					
I am afraid I could go into a depression that would wipe me out					
I am afraid I might try to hurt myself if I become too depressed					
When I am nervous I am afraid I will act stupid					
I am able to stop myself from becoming overly anxious					
If people were to find out how angry I sometimes feel, the consequences might be pretty bad					

I am afraid that I could hurt somebody if I get really angry					

APPENDIX O - Supplementary Material 1 for Study 1

Table O1 Cross-tabulations for self- and peer- identified bullies, victims, and bully-victims (including Kappa level of agreement (κ) for each role)

		Peer-nominated Role		
		Bully	Victim	Bully-victim
Self-reported Role	Bully	14 (κ=.030)	11	4
	Victim	77	105 (κ=.086)	49
	Bully-victim	33	29	17 (κ=.052)

NOTE: overall level of agreement between self-reported and peer-nominated roles was κ=.102

APPENDIX P - Supplementary Material 2 for Study 1

Table P1 Adjusted regression models for social impact; using self-reported, peer-nominated, and combined roles.

	Self-reported			Peer-nominated			Combined		
	B	95% CI		*B*	95% CI		*B*	95% CI	
Factors		Lower	Upper		Lower	Upper		Lower	Upper
Bully	.106	-.245	.456	.569***	.414	.724	.474***	.295	.653
Victim	.218**	.085	.351	.346***	.187	.505	.220**	.089	.352
Bully-victim	.157	-.055	.369	.780***	.554	1.006	.515***	.357	.672
Gender	.038	-.076	.153	.037	-.075	.150	.028	-.085	.142
Age	-.020	-.060	.020	-.033	-.073	.006	-.032	-.072	.008
Ethnicity	.047	-.084	.177	.049	-.078	.177	.035	-.094	.164
Attendance	.005	-.006	.017	.007	-.005	.018	.006	-.005	.018
PP	-.038	-.166	.090	-.078	-.204	.048	-.071	-.198	.056
Parent Ed.	-.087	-.245	.070	-.089	-.244	.065	-.083	-.239	.073
Conduct	.027	-.013	.067	.012	-.027	.051	.007	-.033	.046
Prosocial	.005	-.017	.028	.006	-.016	.028	.011	-.011	.034
Emotion	-.002	-.029	.025	.008	-.019	.034	.002	-.025	.029
Hyper	-.002	-.028	.024	-.003	-.029	.022	-.003	-.029	.022
SE	.001	-.010	.012	.001	-.010	.012	.001	-.010	.013
R^2		.010			.045			.030	
F		1.609			7.537***			4.849***	

Abbreviations: 95% CI; 95% confidence intervals, PP; Pupil premium status, Parent Ed; parent's education, SE; self-esteem

* $p<.05$, ** $p<.01$, *** $p<.001$. The uninvolved role was the reference category in all models.

Table P2 Adjusted regression models for social acceptance; using self-reported, peer-nominated, and combined roles.

	Self-reported			Peer-nominated			Mixed		
	B	95% CI		*B*	95% CI		*B*	95% CI	
Factors		Lower	Upper		Lower	Upper		Lower	Upper
Bully	-.227	-.647	.192	-.217*	-.400	-.034	-.194	-.408	.020
Victim	-.325***	-.485	-.166	-.884***	-1.072	-.696	-.460***	-.617	-.303
Bully-victim	-.331*	-.585	-.077	-1.367***	-1.634	-1.099	-.741***	-.929	-.553
Gender	-.070	-.208	.067	-.03988	-.172	.094	-.038	-.174	.098
Age	.052*	.004	.100	.049	.003	.096	.054*	.006	.102
Ethnicity	-.070	-.226	.086	-.059	-.210	.092	-.056	-.210	.098
Attendance	.022**	.008	.036	.021**	.008	.034	.021**	.007	.035
PP	-.171*	-.324	-.017	-.137	-.285	.012	-.136	-.288	.016
Parent Ed.	-.074	-.263	.114	-.071	-.254	.112	-.076	-.262	.111
Conduct	-.044	-.092	.004	-.041	-.086	.005	-.027	-.074	.020
Prosocial	-.001	-.028	.026	.002	-.024	.028	-.006	-.033	.020
Emotion	-.005	-.037	.027	-.008	-.039	.023	-.003	-.035	.029
Hyper	.047*	.016	.078	.043**	.013	.073	.047**	.016	.077
SE	-.023*	-.037	-.009	-.021**	-.034	-.008	-.020**	-.034	-.007
R^2		.037			.096			.059	
F		6.098***			16.951***			9.986***	

Abbreviations: 95% CI; 95% confidence intervals, PP; Pupil premium status, Parent Ed; parent's education, SE; self-esteem

* $p<.05$, ** $p<.01$, *** $p<.001$. The uninvolved role was the reference category in all models.

Table P3. Adjusted regression models for perceived popularity; using self-reported, peer-nominated, and combined roles.

	Self-reported			Peer nominated			Mixed		
	B	95% CI		*B*	95% CI		*B*	95% CI	
Factors		Lower	Upper		Lower	Upper		Lower	Upper
Bully	.066	-.359	.492	.726	.543	.909	.557***	.341	.772
Victim	-.124	-.285	.038	-.859***	-1.047	-.671	-.410***	-.569	-.251
Bully-victim	-.039	-.297	.218	-.905***	-1.172	-.638	-.185	-.375	.005
Gender	-.150*	-.289	-.011	-.093***	-.226	.040	-.110	-.248	.027
Age	.160***	.112	.209	.135***	.088	.181	.142***	.094	.190
Ethnicity	-.128	-.286	.030	-.095	-.246	.056	-.117	-.273	.038
Attendance	.009	-.005	.023	.009	-.004	.023	.009	-.005	.023
PP	-.085	-.240	.071	-.096	-.245	.053	-.084	-.237	.070
Parent Ed.	-.014	-.205	.177	-.012	-.195	.171	-.008	-.196	.180
Conduct	.054*	.006	.103	.041	-.005	.087	.049*	.002	.097
Prosocial	-.015	-.042	.013	-.012	-.038	.014	-.015	-.042	.012
Emotion	-.077***	-.110	-.044	-.062***	-.094	-.031	-.065***	-.097	-.033
Hyper	.090***	.059	.121	.080***	.050	.109	.086***	.055	.117
SE	-.027***	-.041	-.013	-.024***	-.037	-.011	-.022**	-.036	-.008
R^2		.061			.142			.088	
F		10.330***			26.279***			15.357***	

Abbreviations: 95% CI; 95% confidence intervals, PP; Pupil premium status, Parent Ed; parent's education, SE; self-esteem

* $p<.05$, ** $p<.01$, *** $p<.001$. The uninvolved role was the reference category in all models.

APPENDIX Q – Supplementary Results for Study 3: Role Differences for Cognitive and Affective Empathy

Table Q1 Mean scores and comparisons between bullying roles (Bonferroni adjusted) for cognitive and affective empathy.

			Cognitive Empathy			Affective Empathy		
Factors		***N***	***M***	***SD***	***M_adj***	***M***	***SD***	***M_adj***
Role	**Uninvolved**	161	16.48	4.27	16.41 [a]	18.79	3.84	18.64 [a]
	Bullies	140	15.31	4.31	15.29 [a b]	17.56	3.95	17.52 [a b]
	Victims	161	16.57	4.32	16.40 [a]	18.22	4.70	17.91 [a b]
	Bully-victims	247	14.69	5.08	14.72 [b]	17.21	4.67	17.28 [b]

NOTE: Total *N*=709. Abbreviations: CU-Traits=Callous-Unemotional Traits, AI=Affective Instability, *M_adj*=adjusted mean (adjusted for the inclusion of age and pupils premium as covariates).

Means within columns that do not share a subscript were statistically significantly different between roles in a Bonferroni post-hoc comparison test (p<.05)